

THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment and Administration of Hospitals, Sanatoriums and Allied Institutions, and to Their Medical, Surgical and Nursing Services

Vol. XVIII

May 1922

No. 5

THE NEW CITY HOSPITAL OF CLEVELAND

By J. H. MACDOWELL, ARCHITECT, CLEVELAND, AND S. S. GOLDWATER, M.D., HOSPITAL CONSULTANT, NEW YORK

IN May 1920 the citizens of Cleveland, O., by a large majority vote authorized a bond issue for the extension and reconstruction of the City Hospital. The work of planning and erecting the proposed buildings was assigned to the present writers under the direction of Dudley S. Blossom, director of the department of public welfare. Mr. Blossom began by calling a series of conferences for the purpose of formulating a pro-

gram. The participants in these conferences were a large and representative advisory committee of the City Hospital staff, the architect, the city's hospital consultant and Dr. C. H. McFarland, superintendent of the City Hospital. Later, in the progress of the work, the plans were reviewed and approved by an advisory commission of prominent citizens named by Director Blossom.

gram. The participants in these conferences were a large and representative advisory committee of the City Hospital staff, the architect, the city's hospital consultant and Dr. C. H. McFarland, superintendent of the City Hospital. Later, in the progress of the work, the plans were reviewed and approved by an advisory commission of prominent citizens named by Director Blossom.

After a careful survey of the situation had

been made, it was decided to undertake with all possible speed the construction of a new building for general hospital purposes, designed to accommodate approximately 600 patients; an extension of the contagious building to accommodate 100 additional patients; a modern psychopathic building with a capacity of 150 patients; and an addition to the nurses' home, containing seventy-five rooms. In addition, the program that was

adopted called for the alteration of the administration building, for the enlargement and equipment of the main kitchen (the shell of which had been erected some years previously), for additional equipment for the laundry, and for necessary alterations to the power and refrigerating plants.



the fluctuating requirements of any or all the clinical departments of the hospital. One of the most difficult administrative problems which municipal hospitals have to meet is a variable demand for beds in the several departments. Municipal hospitals cannot, like private institutions, arbitrarily determine the number and character of the cases which they will treat, but must be prepared to give to the community any kind or quantity of service, as the need arises. An examination of the plans of the principal ward building will show how this requirement has been met. Instead of providing a number of isolated buildings, we have combined in a single building ward units so arranged, so sub-divided, and so related to each other, that one or more ward units or parts of units can be assigned to given clinical departments in the most flexible way. For example, a given male or female medical, surgical or special department may consist of one ward of from 32 to 37 beds, of two such wards, or of one whole ward and part of another; and the building is so planned that new assignments can be made from time to time without disturbing the ward routine in any way, the key to the situation being the location and arrangement of the nursing center or service rooms of the ward.

The Typical Ward

Study of a typical ward unit shows that it is adapted for the treatment of any type of disease either indoors or outdoors. Included in each unit is a large open ward with an attached veranda having a southern exposure, the capacity of the open ward being sixteen beds. In some instances, as in the case of the children's ward, this open ward may be divided into individual cubicles. In addition each unit contains several side wards, each having a capacity from one to four beds. There will be approximately an equal number of beds in each single large ward and in its attached and dependent group of smaller wards, so that the segregation of patients, individually or in small groups, can readily be affected. The ward "offices," consisting of chart and medicine room, serving kitchen, sink and utility room, linen and supply room, etc., are located in the middle of the unit, thus minimizing the distance that must be covered by nurses in caring for patients. Separate balconies are provided for convalescents, and there will be a day or dining room for convalescents attached to each ward unit. Attention is called to the location, accessibility, and southern exposure of the day rooms, elevators, corridors, verandas and of the connecting balconies.

The elevators are so grouped that one or more

can be operated according to need; a considerable economy in the operation of the elevators will result from this grouping in a single elevator tower. All of the verandas and balconies face the south, the best exposure both in summer and winter, and all are semi-protected.

Care has been taken to avoid completely surrounding any interior corridor with service rooms; need for the installation of expensive mechanical apparatus for the ventilation of the corridors has thus been avoided.

More than half of the total number of beds in any ward can be placed out of doors, and as a considerable proportion of the patients in any ward are likely to be convalescents, this means that the hospital can practically be converted into an open air hospital during the spring and summer. Outdoor treatment can, of course, be given also in the winter and any part of the building can be used at any time for the treatment of patients suffering from tuberculosis, from chronic diseases of the bones and joints, from pneumonia, or from any type of disease for which special outdoor treatment may be desired.

An important feature has been made of the receiving wards for male and female patients. These wards will occupy the ground floor. All newly admitted patients will ordinarily be placed in these wards first; here the medical and social histories will be taken and a thorough examination made to determine the proper classification of each case and to insure the detection and exclusion of contagious diseases. By the exclusive assignment of physicians and nurses to the admission ward, prompt and efficient attention to all newly admitted cases will be obtained. The social service department will be particularly active and useful in this department.

Close to the elevator tower we have placed a series of examining rooms, containing special equipment for surgical treatment, for medical examinations of general character, and for the special examination of the eyes, ears, the nervous system, etc. These rooms will be the clinical headquarters of the consultants in the various special departments of medicine and surgery, and their location is such that patients can readily be brought to them from any part of the hospital for special examinations. Four clinical laboratories similarly located will furnish needed facilities to the resident staff, will facilitate the prompt examination of secretions and excretions, tissues and fluids of various kinds, and will relieve pressure on the central laboratory.

For the lectures, conferences, and clinical demonstrations, which form so valuable a feature of the work of the progressive general hospital,

a clinical conference and lecture room has been provided on the tenth floor.

The uppermost full floor, the ninth, has been set aside for operating rooms for general and special surgery and for birth rooms for the maternity department; here are six major operating rooms, two rooms for cystoscopy, bronchoscopy, etc., and four birth rooms. The maternity patients will occupy the whole of the floor next below.

The location of the building which we have just described has been determined in part by a desire to obtain the best possible exposure for the wards, and in part by the location of the pre-existing principal service corridor; the latter, extending east and west across the grounds, begins at the administration building and ends at the power house. Directly north of this corridor, and directly connected with it, are the kitchen and laundry. The location of the principal ward buildings directly south of this corridor will make the domestic service as convenient as possible.

The second largest building in the new group is the psychopathic unit. The lines of this will follow those of the V-shaped main ward building, for it is intended eventually to raise this three-story and basement building to the full height of the adjoining ward building and to convert it to general hospital uses. In the meantime the interior of the building has been modified in order to meet the special purposes of a psychopathic building. The ground floor of the psychopathic building will accommodate a small special dispensary, a hydriatic department, rooms for occupational therapy, a psychological laboratory and a small lecture or conference room. Three floors above the ground floor accommodate six distinct wards, three for men and three for women. Two of these wards have many special details of construction and equipment needed for the proper care of patients who are mentally disturbed, but a complete description of these details is reserved for future publication.

The City Hospital has frequently found itself short of accommodations for contagious cases.

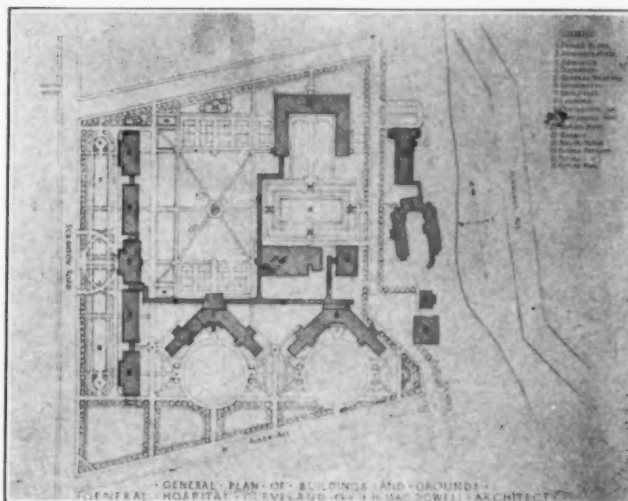
The present contagious hospitals includes four ward units with a total capacity of 100 beds. The new building which will extend to the north of the present contagious group will have a capacity of 102 beds. In the basement there will be store-rooms, a kitchen and dining rooms for physicians and nurses. The three upper stories are devoted exclusively to patients.

This building is planned without interior connection between one floor and another; the isolation of floor from floor is so complete that to all intents and purposes each floor is a separate hospital. By the arrangement of special entrances for patients, doctors, nurses, maids and visitors, it will be possible to establish an ideal anti-epidemic technique.

In planning for the technical administration of a contagious ward, one seeks to insure the proper classification of cases on admission, the avoidance of the contamination of one patient by another, and the complete disinfection of everybody and everything that leaves the ward. Special dressing rooms are provided where the working staff can cleanse themselves thoroughly before leaving the ward, after first removing all garments that may have been in contact with the sick or

with infectious material of any kind. There will be an incinerator on each floor for the destruction of such infectious material as cannot be disinfected and preserved. The ward kitchen, the linen room, the sink room and the operating room will each be provided with sterilizing apparatus to insure the disinfection of all utensils, linens, etc., which are to be re-used. New patients will be admitted into individual rooms, there to remain, as a rule, until the convalescent period has been reached, or at all events until there remains no doubt as to the character of the disease. For convalescents eight-bed wards (divided, however, into individual cubicles) have been provided.

Every service room in the contagious wards can be entered from outdoors, and the same is true of the wards themselves, both large and small. By the use of a narrow balcony, which is carried along the whole length of the building,



1. Future buildings.
2. Administration.
3. Admission.
4. Dispensary.
5. General Hospital.
6. Psychopathic.
7. Employees.
8. Laundry.

9. Contagious building (old).
10. Contagious building (new).
11. Nurses' home.
12. Garage.
13. Boiler house.
14. Future pavilion.
15. Future pavilion.
16. Future pavilion.

all of the patients' rooms can be inspected and the patients themselves can be seen without entering the rooms. It is believed that this feature of contagious hospital construction will add materially to safety and to the convenient administration of the wards.

Nurses' Home and Main Kitchen

The new wing of the nurses' home consists of a three-story and basement building about 120 feet long. The basement contains a large gymnasium, and a small kitchenette and hand laundry. The upper stories are divided into individual sleeping rooms. An interesting feature is the open-air sleeping space on the roof.

The central kitchen and laundry equipment of the City Hospital have been brought up to date. The kitchen will be an especially noteworthy feature of the remodeled plant. The framework of the new kitchen building was erected some years ago; the kitchen itself, which was not fully equipped at the time, is now being provided with the modern equipment for which it has been waiting.

The top story of the present administration building is to be remodeled to accommodate additional resident physicians. Plans have been studied also for an admitting department, for a modern x-ray plant, for a center for physical therapy, for a ward for police cases and for a future dispensary building. For the time being, an out-patient service will be conducted in the remodeled first floor of the old hospital building.

Architectural Treatment

Consideration of the architectural treatment of the facades presented certain difficulties. There was evident the existence of lack of harmony in design, which necessitated a general cramping of style and creating complications in evolving a successful architectural treatment for the new buildings. The inception of the original hospital group years ago was, unfortunately, in no way inspired by a comprehensive and predetermined



Typical floor plan of main ward building.

scheme; its "raison d'être" was questionable and it grew at random much in the manner of an industrial plant rather than as a carefully cultivated creation. Each individual who had to do with its evolution had followed his own fancy, establishing no precedent which could be consistently followed. So diversified were the styles hitherto employed that nearly all styles popular from post Civil War time until the present were in evidence. There was also the element of time to contend with and the spirit of the age directing things as it does along economic lines, all of which were obviously dominant factors in determining the character of the latest additions. This brief survey of conditions at the site is for the purpose of elucidating the great importance which extraneous conditions exerted in the design and the difficult obstacles encountered.

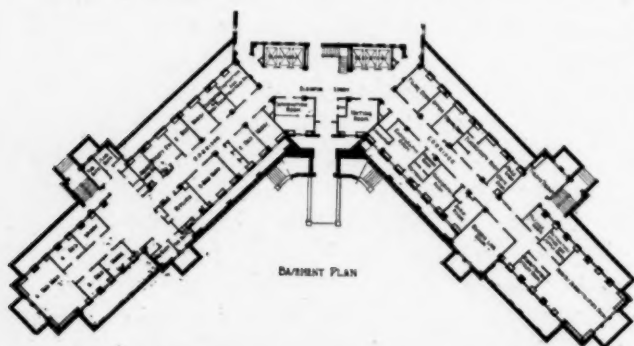
The plan being essentially utilitarian, the various facades resolved themselves into a problem of fenestration; hospital work making this naturally of paramount importance owing to the absolute necessity of maximum light, air and sunshine in conjunction with all departments, and in this case the requirements of adequate sun and airing porches and balconies all of which governed the treatment very materially, occurring as they did on the south or principal facade. After much deliberation and study a comprehensive line of procedure was evolved.

Character of Construction

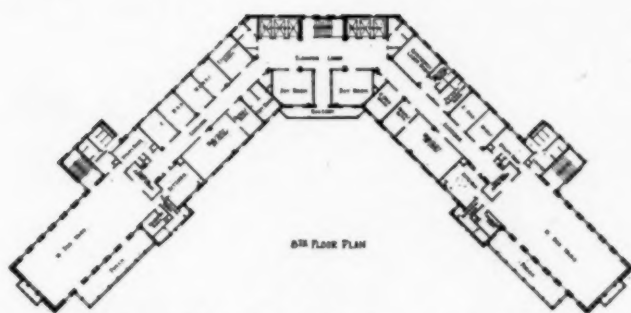
The general hospital building, psychopathic building, and new contagious building are of the skeleton steel frame type of construction, fire-proofed with concrete and tile, H columns forming concentrated supports.

The unusually sandy and clay streaked strata with water-bearing sand and in some instances quicksand, all of which is common in the vicinity of Cleveland, made the subject of soil and foundations a very important one and rendered the use of spread footings necessary.

The subject of floor construction was carefully studied with a view to hospital requirements and cost. A concrete joist and arch, metal pan system



The basement plan of the main ward building; receiving ward and temporary x-ray department.



Eighth floor plan of main ward building; maternity ward.

was decided upon. The metal furring of ceilings, necessary for finished ceilings with concrete joist construction was hung five inches below reinforced concrete joist allowing a dead air space between ceiling and floor slab, serving thereby the double purpose of sound deadening between stories and provision for pipe and conduit space for plumbing and electrical trades. This, in turn, rendered unnecessary the use of cinder fill under finished floors.

Exterior walls, except basement and sub-basement stories, are constructed with buff wire cut face brick backed with construction tile. All trimming is of Amherst sandstone. Interior partitions are of hollow terra cotta and gypsum block serving special requirements.

Special attention was given the design of windows at the psychopathic building with a view to preventing the escape of patients through windows, transoms, or door openings and the breaking of glass at these openings. This was accomplished by the arrangement of grilles and double sash divided into small lights of plate glass.

Operating room windows are constructed with ground plate glass fitted into metal frames, sash and muntins. Windows at operating rooms are fitted with metal framed screens checking the radiation of radiators set below window sills for the purpose of counteracting cold draughts from large glass areas at exterior walls. This gives the required radiation for operating rooms without the excessive warmth from radiant heat or chill from north winds.

All exterior doors and windows are of white pine fitted with weather strips and bronze ventilators set at bottom rails. Ventilouvers are fitted with screens and are adjustable to the weather. All openings up to fifth story are equipped with metal frame screens. All interior doors, sash and trim, are of hollow metal with enamel finish.

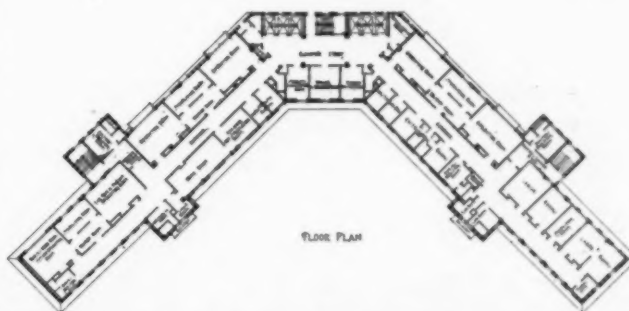
Stairs and platforms are constructed of steel with pressed sheet steel treads and risers ready to receive the finished treads and risers. Main stairways in the general and psychopathic buildings are finished with pink Tennessee marble treads, risers and stringers with sanitary cove at

vertical intersections. All other stairs have mastic filled steel treads and paneled steel risers.

Finished Floors

Terrazzo, marble, tile, mastic and linoleum cover the entire variation of finished floor material in the hospital buildings except at sub-basement where cement was used. Of these terrazzo is preponderant. All porches and balconies are finished with terrazzo with sanitary cove and six inch base. Floor of rooms occupied in connection with cardiograph and radiograph equipment are finished with mastic laid on a cork tile for purposes of insulation. These rooms are also insulated with $\frac{1}{4}$ inch sheet lead at all walls and ceilings. Lobby entrance doors are finished with various pink and gray Tennessee marble with polished marble wainscot. Floors of all corridors consist of linoleum framed with a brass strip into terrazzo border and base. This linoleum strip continues from corridor forming a walking surface between feet of beds of 16-bed wards. Except for this strip in the large wards, floors of all ward rooms are finished with terrazzo with special terrazzo base constructed to prevent the contact of heads of beds with plastered walls. Floor and base of service kitchens are finished with quarry tile and have glazed tile wainscoting, while all toilet, bath, utility and sterilizing rooms are finished with ceramic floor tile and white glazed tile wainscot. Operating rooms have finished floors of 4x4 vitreous gray tile and glazed tile wainscot. The general and psychopathic buildings are equipped with clothes chutes.

The plumbing equipment maintains, as the dominant factors, sanitation and utility. The drainage system is of the individual vent type with cast iron pipe wherever possible. Genuine wrought iron pipe is used elsewhere, except for concealed hot water piping where brass is used. The toilet rooms for the patients, nurses, and general public present no special features. In certain parts of the building, bathing slabs are used in place of bath tubs. These are provided with thermostatic water mixers. All ordinary lavatories for the use of doctors and nurses are pro-



Ninth floor plan of main ward building; operating and delivery room.

vided with elbow mixing valves and no waste stopper. In the contagious building and all operating rooms, knee action mixing valves are used to insure maximum sanitation. The hospital is provided with continuous flow and portable tubs.

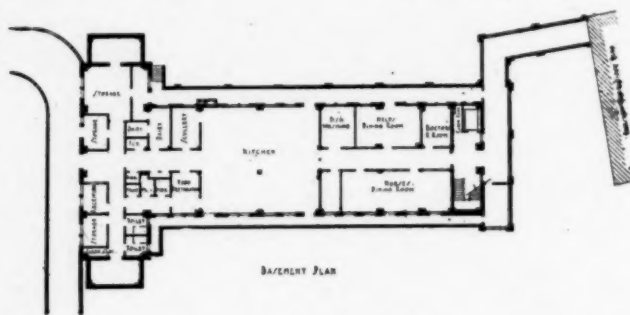
In the two ward buildings each floor has two utility rooms and two diet kitchens. In the contagious building one of each is provided. The diet kitchens contain kitchen sink, gas range, steam table, refrigerator, dish sterilizer, garbage receptor. Flint ware is used for sinks, having the advantage of not crazing and being very hard. The refrigerator is brine cooled and has solid porcelain lining.

Each utility room contains a utensil sterilizer, utility sink, bed pan warmer, blanket warmer, clothes dryer and brine cooled specimen cabinet. In the contagious and children's sections a stool sterilizer is added.

Each two operating rooms have a common sterilizing room containing water sterilizers, utensil sterilizers, instrument sterilizers, instrument sink, utility sink and wash up sinks. A separate sterilizing room contains three drum sterilizers.

This institution has a modern boiler plant, consisting of six 250 H. P. water tube boilers of the Sterling type with "V" type automatic stokers. No mechanical draft equipment is used in connection with the 175 foot smoke stack. Coal is delivered by a run-about conveyor discharging into large hoppers built above the stokers, and an ash tunnel is provided under the boiler room floor and ash is handled by means of a steam jet conveyor.

All steam required for heating and other purposes is distributed from this central boiler plant at about 100 pounds pressure, the pressure being reduced in the buildings to suit the service required. The heating systems in the buildings which formed part of the original group are steam of the direct and indirect type. The buildings that were erected before this program was started are heated by forced hot water. The new buildings are also heated by forced hot water, except the ninth and tenth floors and the hot rooms and baby bath rooms in the new general hospital building. The ninth and tenth floors are heated by steam partly because the operating rooms are located on the ninth floor of this building and heat would be required in these rooms at times when the central hot water heating system is shut down in mild weather. Another reason for using steam on these floors is that the static head on the radiators on the lower floors would be too high if the hot water system was carried to the tenth floor of the



Basement plan of contagious building.

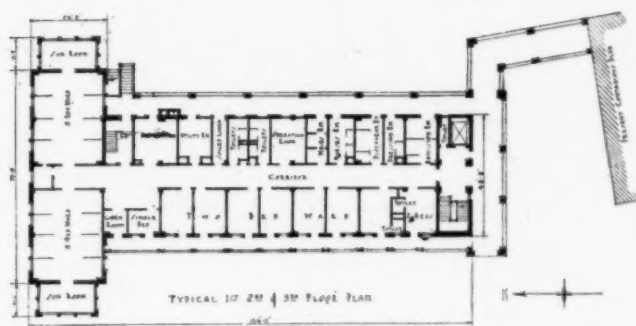
general hospital building, unless the existing radiators were taken out and extra heavy radiators substituted. Hot water for heating is circulated by pumps at the central plant and this water is heated by exhaust steam from the turbines operating the pumps and other steam using auxiliary equipment, and by live steam.

The hot water heating system is designed to maintain a temperature throughout the buildings of seventy degrees in zero weather. The operating rooms and labor rooms have sufficient steam radiators to heat these rooms to 85 degrees with an outside temperature of 10 degrees below zero. The babies' bath rooms have sufficient radiation to maintain a temperature of 75 degrees with an outside temperature of 10 degrees below zero. The radiators in operating rooms, labor rooms and sixteen-bed wards are under thermostatic control.

In the general ward building the operating rooms, labor rooms and corridors on the ninth floor are supplied with fresh air by mechanical means. An individual duct system has been installed, viz., one duct for each room. Each of these ducts is fitted with a mixing damper at the heating coils, the damper being operated by a thermostat in the rooms to be ventilated. The purpose of this arrangement is to maintain a constant temperature and make it possible to heat the rooms to a certain extent without the steam radiators.

The exhaust ducts for the operating rooms are arranged so that air can be taken from a point near the floor or near the ceiling, as desired. The exhaust system for the ninth floor connects to all the rooms to which air is supplied and a separate supply fan and exhaust fan is furnished for this floor so that it will be possible to heat and ventilate this section of the building without reference to other sections.

The ventilation of the general ward building, aside from the ninth floor, is by mechanical exhaust only, this system being connected to the small wards, kitchens, utility rooms and toilet rooms. This exhaust system is divided into three sections, one for wards and similar rooms, one for



Typical first, second and third floor plans of contagious building.

utility and toilet rooms and one for kitchens.

The psychopathic building exhaust ventilation is similar to that of the general ward building except that the supply of fresh air in the psychopathic building is confined to the disturbed patients' ward, this being for combined heating and ventilating service. The new contagious building is equipped with one exhaust fan for ventilating toilets and one exhaust fan ventilating kitchens and utility rooms. The kitchen duct system is quite distinct from the utility room duct system, the two coming together at the fan inlet. In the nurses' home provision is made for mechanical ventilation of toilets only. In the laundry large flat work ironers are equipped with vent hoods which are connected to an exhaust fan.

The original plans of the boiler house provided space for the installation of a central ice making plant and as investigations showed that money could be saved by making all ice and distributing brine to the various buildings for refrigeration, advantage was taken of the space provided and a complete plant installed. The plant consists of two 60 ton CO₂ refrigerating machines, one driven by a direct connected Corliss steam engine and the other by a 100 H. P. motor with belt drive. The ice tank has capacity for seven tons of ice and the brine cooler for 75 tons of refrigeration. The condensing coils have capacity for 90 tons of refrigeration. Brine is circulated by two centrifugal pumps and one steam driven piston pattern pump, the latter being for emergency use.

The electric light and power are distributed from a centrally located transformer vault through a tunnel to the various buildings of the hospital group. All wiring and cable work installed in the tunnel is protected by iron conduit. The wards are lighted by ceiling fixtures which provide general illumination. These are designed for cleanliness and eye comfort. Additional local lighting at beds is provided by means of brackets with plug receptacles for vapor kettles or examination lamps. The night lighting consists of lamps recessed in the walls and covered with a plate of glass flush with the wall. These outlets

are located about eighteen inches from the floor, so low that the light which is thrown on the floor cannot possibly disturb the patients.

A system for paging doctors is used, consisting of lamp annunciators located in the corridors.

The nurses call equipment is a simplified "silent" system of lamp signals operating at the lighting voltage. The signals from the bedside push buttons indicate at the nurses' stations, and in the utility rooms and diet kitchens if desired. There are also red lamp signals over the doors of the large ward and over the doors of each separate room. These are considered sufficient to guide the nurse to the bed from which the call came and no individual bedside signal lamps have been provided.

The general ward building is equipped for taking cardiograph records of patients occupying any ward or private room in the building. A receptacle is installed in each ward and in each corridor so that by means of a flexible cord any patient may be reached from one of these stations. The wires extend from these stations or receptacles through a system of conduit to the laboratory on the first floor. In this laboratory are located the cardiograph machines. In order to avoid any disturbance from vibrations or from moving electric machinery the motor generator for supplying power and to charge the batteries is located in the sub-basement but controlled from the laboratory. Stations are also located in the contagious wards.

An electric time clock equipment of standard construction with a master clock in the administration building will provide accurate time in all departments. The buildings are protected by a code ringing electric fire alarm system with central control in the administration building.

In the general ward building are two x-ray rooms, a fluoroscopic room, and a dental x-ray room arranged in one department in one of the wings of the basement floor. The systoscopic rooms are located on the ninth floor with the operating rooms. In the basement of the main building, a thermotherapy room will furnish electric baking facilities unusual in variety and capacity.

New building construction included in this building program comprises 3,752,000 cubic feet, divided as follows:

General Hospital Building..	2,344,000 cu.ft.
Psychopathic Building	722,000 cu. ft.
New Contagious Building..	384,000 cu. ft.
Nurses' Home Extension...	275,000 cu. ft.
Kitchen Extension	26,000 cu. ft.

The 16-bed wards contains 1,350 cubic feet per bed.

THE CARE OF RADIUM IN THE HOSPITAL

BY HOWARD A. KELLY, M.D., BALTIMORE

IT GIVES me pleasure to write on the care of radium, as I have been intimately associated with its use from the very first, being one of the pioneers in this country. It is also a pleasure as I can speak more freely and with unrestrained enthusiasm as to the admirable arrangements in our institution in Baltimore developed under the skilled hands of my colleague, Dr. Curtis F. Barnam, in association with Dr. F. West, an efficient collaborer in all our technical laboratory work.

As to the financing of a supply of radium I may say that the amount of radium required for lesser treatments, that is to say the treatment of local lesions minor as to size, must be at least one or two hundred milligrams; the present value of a milligram of radium is \$120. For larger treatments and for general use one needs from one up to several grams. The amounts named are always based on the quantity of radium element involved, and do not designate the amount of the salt of radium bromide, sulphate or carbonate.

The doctor who proposes to use radium, applying it himself, ought to specialize in its application as it now constitutes a distinct specialty in medicine, more difficult even than x-ray work. On account of this lack of specialization much harm is being done to great numbers of patients in all parts of the country, while doctors are painfully gaining wisdom and accumulating their "experiences." The smaller amounts of radium, from one to several hundred milligrams can be used in the form of the salt in a stout hollow needle, in a flat applicator or in cylinder, but for the larger quantities the emanation, the active gas given off by radium, is by far the best method of application—as it is more flexible in its use, more adaptable to a variety of conditions and safer in the conservation of the supply, for if the emanation is lost only a day's supply is gone. The use of any large amount of radium involves (1) precautions for its preservation, and (2) the protection of the personnel handling it from any undue exposure to the rays, in other words from taking repeated involuntary treatments.

Protection of Radium and Workers

All over the world in a variety of clinics smaller amounts of radium (valued at from \$5,000 to \$10,000) have been lost either by a patient walking off with the application or by it being thrown into the fire or the ash heap with discarded dressings. The only way to obviate this is to appoint

one reliable person, whose duty is to know at all times where the radium is and what it is doing, to see to the count each time it is changed from one to another patient. When not in use it should then be delivered to the office safe, identified and receipted for, and again receipted for when taken out. When several grams of radium in solution are handled more thorough-going methods of conservation must be employed. First of all a burglar-proof vault provided with a time clock opening the door at a fixed time each day is a necessity. Inside the vault the radium must again be enclosed in a stout lead box. Two or more persons must invariably be on hand as long as the vault is open. An alarm clock and a light in a conspicuous place show at once whether the vault has been tampered with.

Danger to workers is through breathing the emanation and from exposure to the rays over any considerable period of time while handling the radium. The detrimental action of the radium is on the blood-making apparatus of the body and the glandular system, producing a profound rebellious anemia. If the fingers are much exposed the skin becomes thin and sensitive, and the tips take on a pencil form.

We obviate these dangers:

- (1) By cutting down to a minimum the exposure of the personnel.
- (2) By screening off the radiations while the emanation is being pumped off and manipulated in transference to its final containers.
- (3) By eliminating the dangers from unavoidable leaks by means of strong ventilating fans which rapidly change the atmosphere of the room.

We protect our technicians by limiting the amount of the exposure of each one. We have a staff large enough to put a new man on each day in the week (no pumping is done on Sunday), making a staff of six liable to duty; this we believe is a far better plan than to keep one man on for several months, say "six months on and three months off," as I understand is done in one large clinic abroad. Such a plan we feel is knocking a man down and then trying to build him up again.

Under our method there can be no cumulative effect on the blood while at the same time the relation of the worker to his work, which is highly technical and calls for deftness maintained by constant practice, is not impaired by detachment for a long period.

The two who oversee the pumping off of the emanation enter the vault at any early hour when the clock permits and prepare the apparatus by greasing the stopcocks and generating the oxygen for sparking down the undesirable $H + O$ gases which accumulate along with the emanation from the disintegration of the water by the radium solution. The mercury pump is then put in motion to concentrate the emanation gas which has generated in the past twenty-four hours into a collecting tube in which it is next transferred to the condensation room where it is further purified by removing the excess of oxygen, hydrogen, nitrogen and helium. When purification is effected, the emanation is concentrated into a tiny glass bulb and into a number of glass needle points or spicules of capillary size which are at last ready for measurement. This final step which determines the quantity of emanation in each little container, is not taken until after three and one-half hours when the emanation has ripened, so to speak.

All of these steps are completed by 10:30 a. m. Aside from the shifting of the personnel mentioned, further protection of the workers is secured by observing the following precautions:

(1) In the vault our very simple pumping apparatus greatly shortens the time and proportionately the amount of exposure. This step may last from twenty minutes to one hour.

(2) Around the bulbs containing the stock radium solution we have disposed a ton and one-half of lead, forming a three-inch lead wall between the operator and the element.

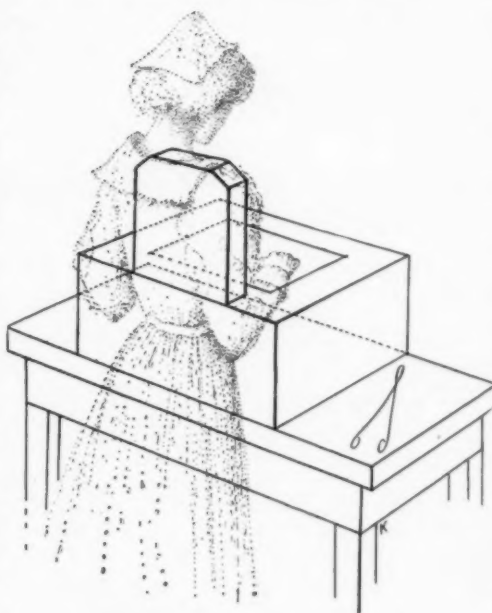
(3) When the emanation is pumped out of the inner apparatus, and while it is being propelled through the glass tubing to the mercury bath where it is collected, the operator is protected by a screen of lead one inch thick.

Note well that during these earlier stages the emanation is not as dangerous as later when it has matured; at first it gives out alpha rays which do not escape from the tube, and is in process of forming radium A, B and C. The active deposit which alone is to be feared, on account of the fact that beta and gamma ray activity does not reach its maximum until three and one-half hours have elapsed.

(4) Vigorous electric fans are turned on before the vault is entered, completely changing the air in five minutes and removing all traces of mercury vapors and emanation (a most important precaution!). Similar precautions are taken in the condensation room following this. The cost of running these fans, about two cents an hour, is the only cheap thing connected with radium.

From the hands of the technicians the radium now ready for therapeutic use goes into the hands of the doctors and nurses who make the applications to the patients. Treatments dealing with so many diverse diseases call for a variety of apparatus and applicators of all sorts entailing more or less exposure, where again precautions must be enforced.

The first step in these practical hands is to assume charge of the day's supply of emanation in a special room where it undergoes the manipulations necessary to adapt it to its sundry uses. In this room it is first deposited in a lead box six inches deep, and with walls three inches thick. The box stands on a heavy iron safe, in which the needle points are kept. In order to protect the thyroid and the breasts of the nurses, the heavy lead plate extends up on the side next to the body of the person in front of it to the height of the chin. (See Fig.)



Nurse in front of deep lead box containing radium emanation engaged in placing emanation in the various apparatus for the treatments. The block of lead, resembling a tombstone, protects the chest and neck.

The nurse looks over this and works around it on either side. In all manipulations direct contacts are avoided by

using forceps and tongs twelve to fifteen inches long.

When the emanation, suitably prepared, is taken to a room for a treatment, it is held as far as possible from the body and deposited in the room at a far corner until at the last moment it is called for. In a small room it is kept altogether outside until wanted. When it is necessary to hold it in the hands for a short contact application, say for one or two minutes, long forceps are used and the doctor or nurse stands at arm's length and with the body as distant from the patient as possible.

We employ one head radium nurse, a woman of high intelligence, as instructress for the others. She remains permanently on duty but never gives treatments. Instructions are given with dummies. The remaining nursing personnel remains at work

for six weeks and no more. We plan for each one two weeks day work, two weeks night work, and again two weeks day work; three nurses are on duty besides the head nurse. The doctor who admits the case decides alone or in consultation what amount of radium is needed in a particular case and how it is to be applied. The doctor in charge of the treatment rooms then works out how he can best give the allotted treatment with the amounts of radium at his disposal; for example, if two gram hours at an inch distance over a growth is the order, if he has two grams in a tube it is applied for one hour; if, however, he has but one gram free, it is applied for two hours which is of course the equivalent. It constantly falls to the lot of the writer to give the uterine cervical treatments in the cases of cancer. The patient as a rule kneels in the knee-chest posture; the tray of instruments is by the bed and two nurses assist; the speculum is inserted, the area exposed, and the emanation brought from the most distant part of the room, inserted and packed into place. The patient then lies quiet until the time calculated is up, usually from two to three gram hours.

Examinations of the Blood

In the case of the doctors and technicians the blood is examined at regular intervals (monthly). Blood examinations of the nurses are made on entering the work and again upon leaving, and these records are kept on file. As yet we have not been willing to take on a nurse with a low blood count; this however needs investigation. Nor do we accept a nurse whose blood count drops while she is on duty. Anyone on the permanent staff whose blood drops is taken off for an indefinite period.

It appears probable from observation that there are great individual differences in the resistance to changes in the blood. By these careful studies we are able to accumulate a group of nurses available for radium duty who are not susceptible, so that while we have not as yet called on them to serve oftener than once a year, we feel that we shall in all probability be able to shorten this period to six months with safety.

Such are the many and varied precautions taken to avoid injury to our co-workers, precautions which have grown up with our experience. I repeat what I have said, that the evolution of this piece of scientific machinery has been due to the assiduous attention of my colleagues, Drs. Burnam and West, to all its details. Their great reward is the confidence we now feel begotten of the success in overcoming a dangerous hindrance in handling this new potent and still mysterious element.

INSPECTION OF CLINICAL THERMOMETERS

An inspection of clinical thermometers manufactured in the state of Massachusetts resulted in the rejection of 49 per cent of them which bore the official manufacturer's seal. Following this investigation legislation was enacted which gives to the director of standards the authority to test any clinical thermometer in the state. The following account of the investigation and the new legislation is given in the annual report of the director of standards:

"Under the provisions of Chap. 152, Acts of 1917, several manufacturers of clinical thermometers had submitted samples of their product intended to demonstrate their ability to maintain a high degree of accuracy and were thereupon authorized to affix the manufacturer's seal instead of submitting thermometers to the director of standards for test before offering them for sale in Massachusetts. Later investigation developed the fact that some of these manufacturers were abusing this authority by selling thermometers bearing the manufacturer's seal which would not pass a satisfactory test for accuracy. The existing law did not authorize taking possession for official test of any thermometers which bore the manufacturer's seal and further legislation appearing necessary the director petitioned for and the legislature enacted Chapter 263 as an "emergency" act which became immediately effective when signed by the governor on April 12.

"This act provides that the director of standards may inspect and test any clinical thermometers in the possession of any manufacturer or dealer in the commonwealth and for this purpose may remove them to such place as he may deem most convenient. If any thermometer is found to be incorrect he is empowered to condemn, seize and destroy it. The director is authorized to prescribe rules and regulations governing the manufacture and sale of clinical thermometers and may authorize sealing by the manufacturer thereof who agrees to conform to such rules and regulations and files a surety bond in such amount and upon such conditions as the director may require. The director is authorized to revoke the authority given by him to any manufacturer who does not conform to the rules and regulations.

"Any person offering or exposing for sale, or selling a clinical thermometer which has not been sealed or certified as correct by the director or by the manufacturer is liable to a fine not exceeding \$10 for each thermometer so sold, or kept, offered or exposed for sale. Whoever violates any rule or regulation prescribed by the director is punishable by a fine of not more than fifty dollars.

"The wisdom and necessity of this legislation is clearly shown by the fact that inspection and test of 4,564 thermometers bearing the manufacturer's seal-mark resulted in the suspension or revocation of the right to use the seal-mark in the case of five of the manufacturers involved, they being thereafter required to submit all thermometers to this office for test and certification before selling or offering them for sale in this state. Through such action future purchasers of clinical thermometers in this state may be reasonably certain of procuring safe and accurate instruments."

Following is a record of the tests upon which the suspensions and revocations were based:

Tested, 4,564. Passed, 2,306. Rejected, 2,258, or 49.4%.

Laboratory Tests of Thermometers.

Accurate	7,428
Inaccurate	4,301
Broken when received or during test.....	157
Total submitted	11,886

THE NEW SANTO TOMAS HOSPITAL, PANAMA, R. P.

BY EDGAR A. BOCOCK, M.D., MAJOR, MEDICAL CORPS, U. S. A., SUPERINTENDENT, CITY OF PANAMA

THE present Santo Tomas hospital, which according to all available records is the oldest institution of its kind in the new world, is located at the intersection of 16th and B streets in the city of Panama, the capital and largest city of the republic.

This location is in the center of the noisiest and dirtiest part of the town. Just in front of the main entrance to the hospital, the tramway line makes a short curve, so that with the passing of each street-car a terrific noise is produced; automobiles passing in both directions constantly honk, while street dealers with push carts shout their wares on all sides. During carnival and other festivals the constant din from the streets around the hospital is terrific and has a very bad effect on the many patients who are quartered in the wards near the streets. Owing to the location of the hospital buildings in the center of the city on a rather low level, the heat from adjacent structures is intense. The present buildings are

Also, owing to the poor arrangement, wooden construction, and age of many of the buildings, it is absolutely impossible to maintain the desired cleanliness and modern sanitary conditions which present day hospitals demand. In view of these conditions, it has always been extremely desirable to remove the Santo Tomas Hospital from its present location to some other more suitable site about the city.

For several years the government of the Republic of Panama has contemplated the construction of a new and modern hospital to be a national institution and to replace the present old and inadequate Santo Tomas Hospital, whose defects have been already described. Owing, however, to financial difficulties, governmental changes and other obstacles, it has never been possible to make this wonderful project a reality until the year 1919. Some time before that date, special legislation had been passed by the national assembly appropriating a part of the revenue derived



The Spanish type of architecture, which characterizes the twelve buildings of the new Santo Tomas hospital, may be noted to advantage from this view of the main building (right) as seen from the interior of the quadrangle.

old, inadequate and irregularly arranged, owing to the original date of their construction, as well as the fact that new additions have been built from time to time, thus making the whole group an admirable fire trap during the dry season.

from the liquor tariff and the national lottery for the construction of the new hospital, and this fund at the time was accumulating at the rate of approximately \$25,000 per month and about \$250,000 was already available in the treasury

for the purpose. With this amount of money on hand and with the prospects of a steady income for an indefinite time, it was decided to commence the construction of the new hospital immediately.

Several sites around the city were investigated, such as El Cangrejo, Perejil and the Bella Vista tract lying to the left of the suburbanized part of Bella Vista. On account of the high prices at which the land mentioned was valued and for other reasons, it was finally decided to use the site known as El Hatillo property which belonged to the national government. El Hatillo is located on the south side of the city and within one mile of the center of the business district. It adjoins the exposition grounds, lying between them and the ocean and forms a part of one of the most attractive suburban residential sections of Panama. While located sufficiently far away from the city to avoid the heat, noise and dirt, it is

convenient to the street car line and the principal thoroughfares, thereby affording easy access to the hospital. The site selected had for many years been used as rock quarry with the consequence that in contour it was extremely rough and irregular and it was very apparent at the beginning that to grade and prepare the location for the buildings would be an expensive proposition. Otherwise, the location selected was extremely desirable since it fronts directly on the Pacific Ocean.

From the wide veranda which will surround the main building of the new hospital can be seen the Santa Rita mountains about thirty miles away down the coast of Panama, the great canal winding its way across the isthmus, "dividing the land and uniting the world," while the beautiful islands of Taboga, Taboguilla, Naos and Flamenco, heavily fortified by the coast artillery of



The layout of the new Santo Tomas hospital, now practically complete, which will replace the historic old building.

the United States army lie on the right of the view. From the position of the hospital a panoramic view of the Bay of Panama, the coast line with its environs for nearly ten miles, can be obtained. This magnificent view of the Pacific combined with the balmy summer days and cool refreshing nights, which prevail in this locality, should combine in a remarkable manner to conduce the rapid recovery of the patients who will be admitted to the new Santo Tomas hospital.

After preparing the outlay for the hospital, the building commission decided that it would construct the most modern institution of the kind in Central or South America. Of course, it was realized that the funds available were limited and should be used judiciously, but it was considered advisable to plan a model institution, furnished with the best equipment that was obtainable and to work toward that end, even if difficulties were encountered, on the assumption that once begun, the way would open up for satisfactory progress as the construction advanced. It was also felt that, since the new institution was to be the national hospital of the republic and at the same time a hospital that would assume a position of international prominence in Latin America and in fact in the entire medical world, it should be planned and built in a manner consistent with the position that it would eventually occupy. With this policy regarding the new institution settled and with approximately \$250,000 in the bank available for use, work commenced.

In the beginning it was roughly estimated that the new hospital should cost approximately \$600,000, but owing to the extremely high prices of building materials, as well as the grading and filling, it was soon found that the original estimate would not be sufficient to more than commence the actual construction of the group of hospital



The operating room occupies the center of the patio. From ten to eighteen operations are performed here daily.

buildings. Preparatory work alone has cost about \$400,000 and the seawall, which is being constructed at the present time and which is absolutely necessary to control the high tides, will cost about \$150,000 additional. Thus practically all the funds that were originally estimated to complete the entire hospital will be expended. The present estimate of the cost of the hospital, exclusive of the proposed Gorgas Memorial Institute of Tropical Medicine and Public Health which is expected to be built in connection with it, is approximately \$1,800,000 or about \$2,000,000 if the institute is included. This estimate is made to include a complete outfit of modern and first-class equipment throughout the entire institution.

The kind of hospital that was determined to be best adapted to local conditions was a modified pavilion type, consisting of a main building in which will be located the major part of the activities of the hospital and which will be surrounded by a suitable number of separate sections for the care of special diseases that, on account of their prevalence in this country, warrant a special building. This type of hospital was believed to fulfill the requirements of centralization of administration, economy and efficiency in operation and practicability for the care of patients in the best possible manner. The capacity of the new hospital is to be 750 beds, and allowing for future growth of the population, to be ample in size to care for 900 patients, if such expansion ever becomes necessary. This bed capacity was based on the average number of patients treated yearly in the old Santo Tomas hospital during the past ten years with a certain allowance for the increase of patients, which will undoubtedly follow after the new institution has been completed.



Santo Tomas hospital, built in 1696, is believed to be the oldest institution of its kind in the new world.

The layout of the new hospital covers fourteen acres of ground or about nine ordinary size city blocks and is being located just along the beach of the Pacific. As will be seen from the photographs, the layout is bounded on the north by 37th Street, which extends to the sea front, and on the south by the Grand Via that as yet has not been entirely completed through to the sea. It will also be noted that a two-way boulevard is being built along the sea shore just inside the seawall. It is contemplated at some later date to extend this boulevard along the sea front to Panama, one mile distant.

Twelve Buildings in Quadrangle

The buildings that are being constructed will be twelve in number and are planned to be arranged in the form of a quadrangle with the magnificent main building and its annexes occupying the center of the frontage and flanked on either side by the doctors' and nurses' quarters, the maternity and venereal sections being farther to the rear, while the isolation, laboratory and tuberculosis sections will be situated immediately behind the annexes of the main building. The Gorgas Memorial Institute will be located to the right of the other hospital buildings in the block just behind the new British Legation, while the chapel, employes' quarters, shops, garage and other utility buildings, will be situated at appropriate places to the rear of the main buildings.

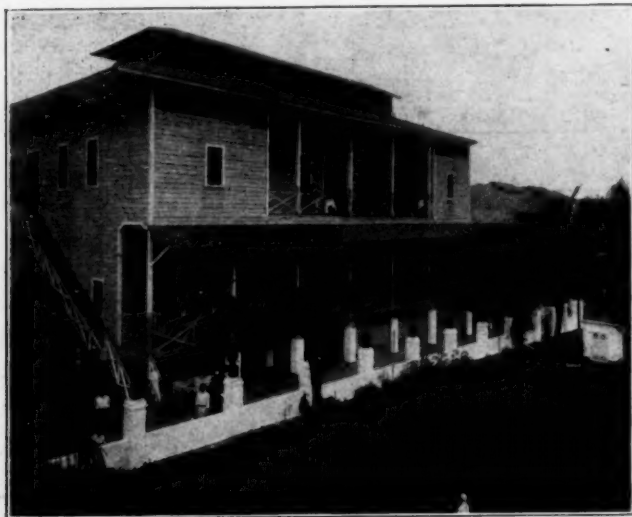
Four acres lying between the front of the main building and the Malecon will be occupied by ornamental gardens filled with tropical shrubbery and flowers, with a fountain in the center of the middle block. Immediately in front of the entrance to the main building and forming a center of a circular driveway, will be placed a concrete flag pole, seventy feet in height. The vacant spaces

lying between the rear of the hospital and First Avenue will be utilized for vegetables gardens, since the soil in this locality is very productive and well adapted to grow native as well as foreign vegetables and fruits. The entire layout will be linked together by a mesh-work of streets and sidewalks which will offer easy access for transportation of patients and materials to all parts of the grounds. The buildings will be constructed of reinforced concrete and concrete blocks, and the streets will be of concrete with an asphalt surface. The entire layout will be surrounded by palm trees, with hedges of hybiscus forming a border to all the principal streets and walks and tropical flowers interspersed in such a manner as to form most beautiful and attractive grounds.

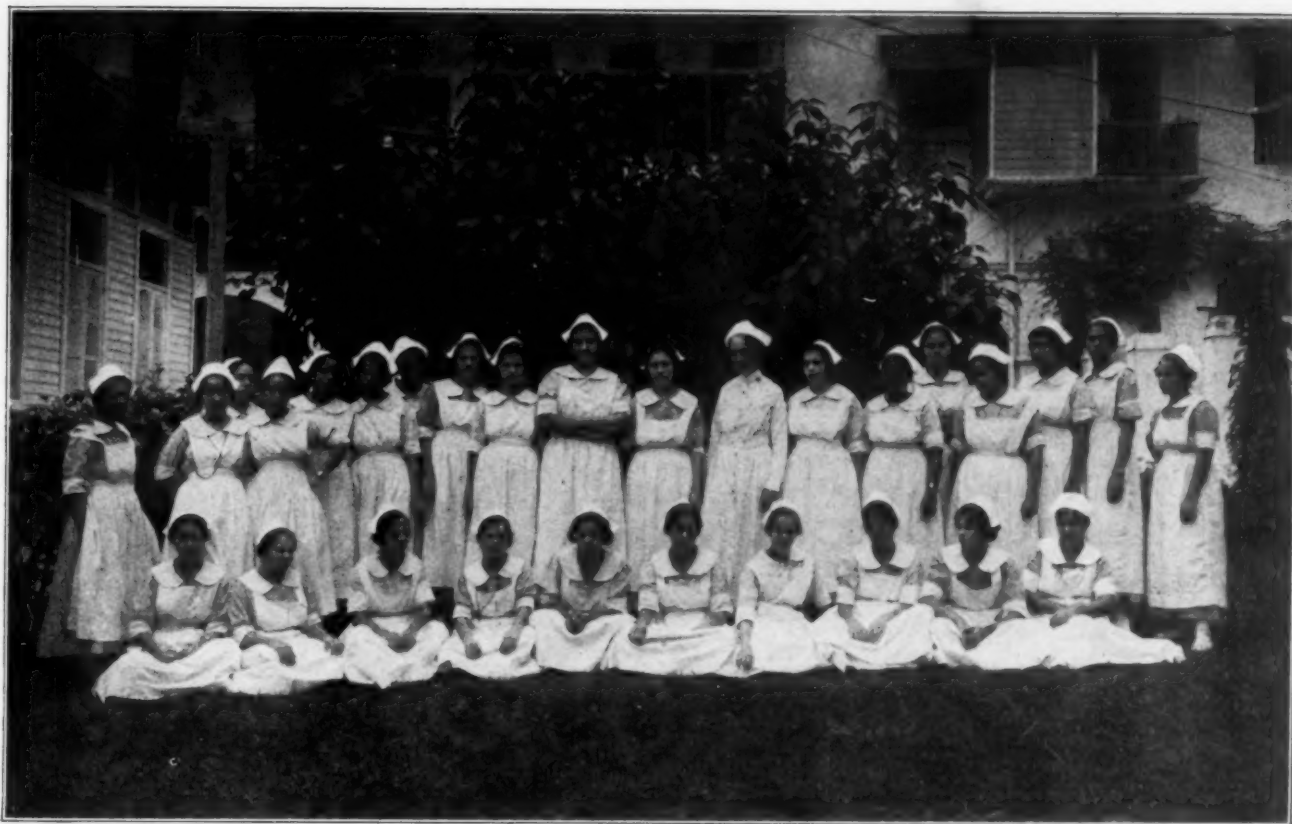
Plan of the Main Building

The main building of the new hospital will be five stories in height, 240 feet in length, 50 feet wide, and connected with three annexes or sections of the same height, each 109 feet long and 47 feet wide. Its normal capacity will be 433 patients in addition to housing all of the general utilities of the hospital. In the basement floor will be located the admitting office, which will be entered directly from the street on the south end of the building. Immediately adjacent to the admitting office are the dispensary with three examination and treatment rooms, a dental clinic and small laboratory. In the center of the basement floor is located the patient's clothing locker room, while under the front portico is the clothing disinfecter for the entire hospital. In the north end of this floor of the building is located the linen department, where all counting, storing, sorting and mending are done. This section is connected with all wards of the main building by means of a clothes chute, which will convey all soiled linen directly to the laundry room.

In the basement floor of the left wing is located the eye, ear, and throat clinic with its examination and treatment rooms, while at the extreme end of this wing is the pharmacy and medical supply department of the hospital. In the center wing are located the main kitchen, main diet kitchen, bakery, refrigerating rooms and dietitian's and steward's offices. In connection with the refrigerating plant, ample provisions have been made for the storage of meats, perishable vegetables and the manufacture of ice cream. In the right wing of the basement floor are located the graduate and pupil nurses dining rooms with necessary serving rooms, a complete hydro- and electro-therapeutic department while the store rooms and supply department for the hospital are at the extreme end of the wing.



A woman's surgical section at Santo Tomas has accommodations for 100 patients. Adjoining are the nurses' quarters.



Fifty pupil nurses from Panama make up the student body of the only training school for nurses in Central America.

On the first floor which is entered from a large and spacious portico surmounted by four Corinthian columns is the main foyer. Cheerfulness is the keynote of this room and as the patient enters it he will find at his convenience, information clerk, chief nurse, superintendent and the business office. There are in connection with the administration suite a spacious library, board room, and a school of student nurses. In the main part of this floor there is located a medical ward of twenty-eight beds for male patients. In the left wing is located a similar ward of twenty-eight beds for female patients. The center wing is devoted to the main dining rooms for the patients with serving rooms and dumbwaiter service from the main kitchen. The right wing is given to a medical ward of twenty-eight beds for men. All parts of the building above the ground floor have large spacious screened porches.

The second floor is devoted entirely to wards with their diet kitchens, examination rooms, utility rooms, and linen closets. There are two medical wards of twenty-eight beds each for men, two medical wards of twenty-eight beds each for women and one prison ward of thirty beds with four cell rooms. The prison ward is so situated as to be entirely separate from the rest of the floor having its own service section.

The main part of the third floor is given to twenty semi-private rooms each of which have

clothes closets and running water. In the left wing is a surgical ward of twenty-eight beds for women; in the center wing a children's ward of thirty beds; and in the right wing a surgical ward of twenty-eight beds for men.

The fourth floor has in the main portion twenty-five private rooms. The majority of these rooms have private baths and are so arranged that they can be thrown into suites of from two to five rooms when desired. With the addition of the large porch facing the sea and the high altitude this is easily the best location in the entire building. The center wing is devoted to the operating suite which consists of two major operating rooms, two minor operating rooms, a large sterilizing room, a nurses' work room, doctors' scrub-up, anesthetizing rooms, dressing and rest rooms for doctors and nurses.

The x-ray department is also in this wing and includes two operating rooms, plate examination room and a dark room for developing work. A dressing room and store room for the suite complete this section. In the right wing is a surgical ward of twenty-eight beds for men.

The tuberculosis section is a two-story building, 120x40 feet in size, of reinforced concrete construction and hollow block walls having a red Spanish tile roof. There are large screened porches on both sides of the building giving the patients ample room for recreation when not con-

fined to their beds. The building is located directly in the rear of the main building and faces the sea.

The first floor is devoted to eight private rooms with toilets, locker room for patient's clothing, diet kitchen, a dining room and utility rooms. The section nurse's office is on this floor near the main entrance as well as the doctor's office and examination room. There are private toilet rooms for both the doctor and section nurse.

The second floor entrance to which is gained by a large stairway at each end of the front veranda is devoted to two wards of 17 beds each. The nurses' station and diet kitchen are located midway between the two wards making the service combined. There are also toilet rooms, utility room and a dining room on this floor.

In design, size and construction the isolation building is largely the same as the tuberculosis building and is so arranged as to meet the requirements of a contagious disease department.

Sixty beds in the building divided into sections accommodate at least eight different diseases. The sections vary in size from two to ten beds each, each section having its own toilet, bath and utility room.

On the first floor near the entrance is located the office of the section nurse of the building, also the admitting section which consists of doctor's office, examination room, and a receiving room with bath. There is a main diet kitchen on each floor connected by dumbwaiter service. The porches are also screened off giving each section a portion for the patients when not confined to their beds. There is a large sterilizing room and locker room on the first floor.

The venereal building is a two-story building, "T" shaped, 170 feet across the front with an extreme depth of 78 feet, of reinforced concrete construction, hollow block walls and red Spanish tile roof. The first floor is devoted entirely to the treatment of men, having a complete examination and treatment department in the center of the building near the entrance.

There is a section nurse's office, private toilet rooms, and supply room in close connection with the examination suite. Two wards contain 19 beds each, one located on each side of the patio

which is directly in the center of the building. The patio is 30x15 feet in size and is so arranged as to form an outlet for patients who are not confined to their beds.

In the rear portion of the building there are four private rooms, a four-bed ward, a locker room, toilet room, main diet kitchen, and dining room. The building has large screened porches on both front and rear.

The second floor is identical in arrangement to the first with the exception that it is devoted entirely to the treatment of women.

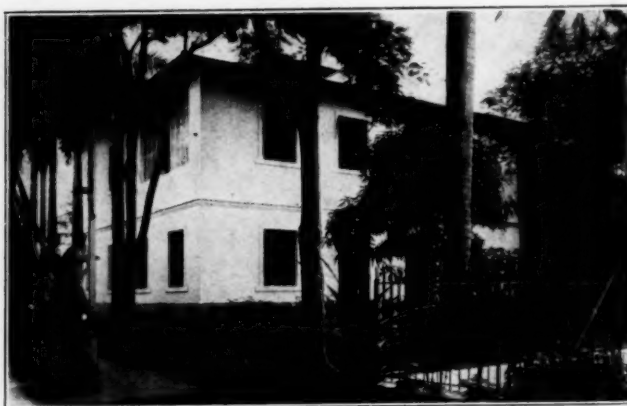
In design, size and construction the maternity building is similar to the venereal building. Arrangement of rooms, and wards is practically the same with the exception of the examination section which is arranged to meet the requirements of this building. The delivery section is on the second floor and consists of two delivery rooms, sterilizing room, examination room, quiet room and the necessary utility rooms needed in this section. This building has a capacity of 90 beds.

The laboratory is also a two-story building adequate in size to care for all the work of the hospital and at the same time to perform the functions of a board of health laboratory for the republic. This building will contain in addition a morgue, autopsy room and crematory.

Modern equipment and facilities will be installed throughout the new institution. Sound proof walls, silent bell call system, floor night lights and inclosed clothes chutes are being used in each one of the buildings.

The entire fifth floor of the center wing of the main building will be devoted to the surgical and x-ray suites and the equipment of these departments will be entirely modern in every way. A radium department will be a feature of the surgical suite and hydro- and electro-therapeutic rooms and equipment will be located in the basement floor.

Appliances and accessories for use in equipping the new hospital will all be purchased in the United States and abroad and when finished the Santo Tomas Hospital will undoubtedly be one of the most modern, thoroughly equipped and finest institutions of its kind south of the United States.



With its walls of reinforced concrete and its red-tiled roofs the maternity section resembles in general style other buildings in the group. This section cares for approximately 125 deliveries monthly.

THE SMALL COMMUNITY HOSPITAL*

BY OLOF Z. CERVIN OF CERVIN & HORN, ARCHITECTS, ROCK ISLAND, ILL.

IN AN article in a preceding issue on the small community hospital some general considerations in planning were made and emphasis was given to the need of centralization so as to minimize the walking distance of the nurse in giving service to patient. It has been estimated that a nurse will walk from four to five miles a day when on duty; if 20 per cent of this distance can be eliminated, she will naturally be able to take care of more patients with the same effort.

This article might well start with emphasis on centralization. Fig. 1 illustrates how it can be achieved. The elevator, the nurses' station, the stairs, the x-ray room, and the entrance to the operating suite are all grouped together. The diet kitchen and the nurses' utility room are close to the stairs; next come the general toilets and bath. The balcony is over the ambulance entrance on the main floor and close to this entrance is an emergency operating room.

Fig. 1 also illustrates an operating suite. This is so arranged that the sterilizing room will serve both the delivery room and the operating room.

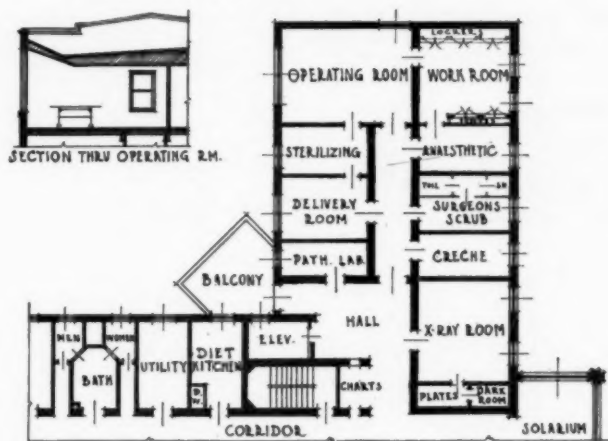


Fig. 1. Operating suite and service arrangement.

The nurses are given a large work room with table and liberal storage capacity in wall cases. It is well to have the dressing sterilizer in or very near the work room. The pathological laboratory is located nearby for convenience in rapid diagnosis of tissues before completing the operation. The x-ray room is on this floor rather than in the basement so as to avoid dampness. The space allotted is about the minimum: a word of warning to avoid making the x-ray room so small as to be

a constant annoyance should be heeded. It should have convenient a dark room and a plate storage room. The dark room should be lead lined to keep the x-rays from spoiling the contents. This room need be convenient to the elevator for outpatient use.

Lighting the Operating Room

The cross section of the operating room in the same figure shows an economical method of lighting which should have more publicity. This does

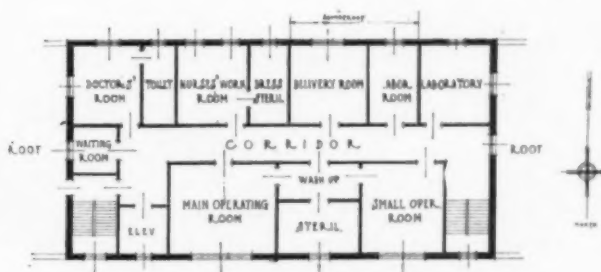


Fig. 2. Upper story of operating suite.

away with the standard skylight involving first cost and upkeep, as well as probability of leakage. The window is made unusually high, the ceiling being inclined up about three feet; the resulting angle of the ceiling is such that the light reflected from the ground will again be reflected to the operating table. The window should be double glazed. This arrangement is no longer an experiment and is being used in the east as well as in the middle west.

A better arrangement for an operating suite is shown in Fig. II, where it is located in a story above the rest of the building and free on all sides. This gives more privacy and makes the exterior interesting. It is, however, expensive both in initial cost and upkeep. The plan provides

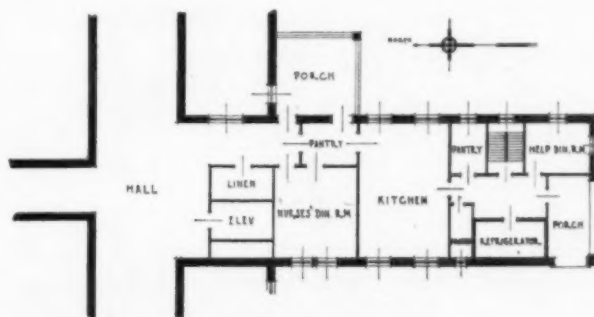


Fig. 3. Kitchen arrangement.

*Article I on The Small Community Hospital appeared on page 225 of the March issue.

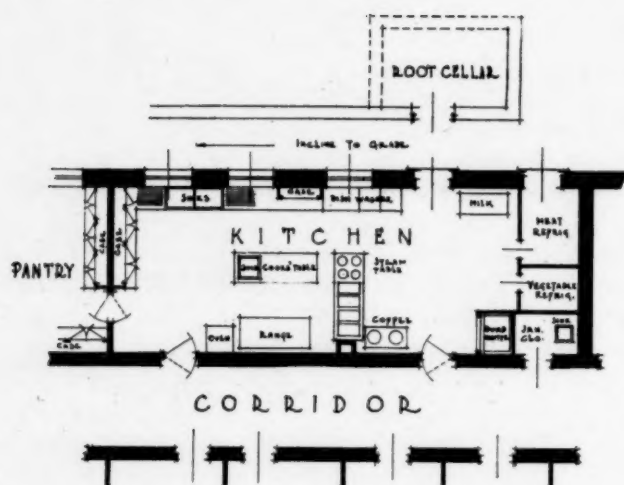


Fig. 4. Detailed kitchen layout.

greater operating facilities, a waiting room for friends of the patients and a labor room next to the delivery room. The delivery and labor room should be sound-proofed with special doors, double windows, and insulated partitions. The x-ray laboratory is located elsewhere. Fixed equipment in the operating room should be the minimum. Some doctors banish sinks and even floor drains, vent ducts and registers, the better to maintain a sanitary condition. There should be the best type of electric operating light fixtures in the ceiling and side outlets for local lights, fans and emergencies, including gas outlets. A surgeons' lavatory and a slop sink should be placed close by. The nurses' work room requires a large table, an abundance of shelving and lockers and a washup lavatory. The doctors' toilet requires lockers, washup lavatory, water

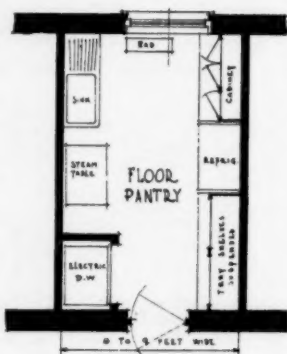


Fig. 5. Typical floor pantry.

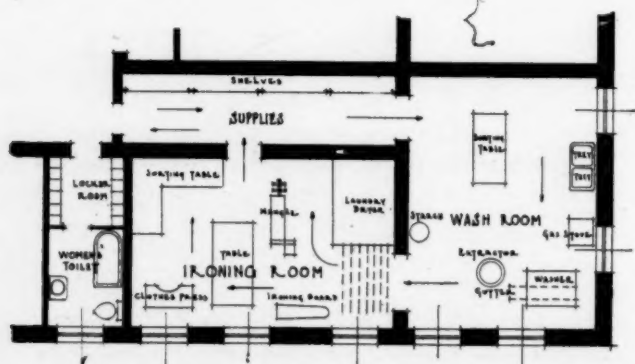


Fig. 6. Laundry arrangement.

closet and shower. Whether it is a good practice in a small hospital to provide a special room for anesthetizing may well be questioned. It would appear that most doctors now prefer to have the anaesthetic administered in the operating room itself. The delivery room should have a supply case and a washup sink and should be almost as well lighted as the operating room. The creche or baby room should have a special infants' wash sink with gravity flow of water, automatically tempered, a compartment case with a division for each infant's supplies and shelf for the cribs. Equipment in the sterilizing room can be reduced to the minimum of a hot and cold water outfit and an instrument sterilizer provided the dressing sterilizer is located in or near the nurses' work room and a utensil sterilizer is provided in the nurses' utility.

If the kitchen can be arranged as in Fig. III with air and light on two sides, it is fine indeed. Economy will probably dictate some arrangement similar to Fig. IV, which gives in detail the location of various necessary fixtures including a mechanical dishwasher and an oven. The range is for gas or coal as circumstances dictate. Opposite the entrance and across the incline is a root cellar which will be found convenient where potatoes and other vegetables are bought in large quantities. The refrigerator is divided into two parts, one for meats and one for vegetables. Milk should be kept in an ice box made for the purpose. Large store rooms for kitchen supplies should be located as close to kitchen as possible.

Diet kitchens or floor pantries should be placed above each other and the main kitchen and should have dumb waiter connection electrically controlled if possible. Whether these kitchens need be large enough for the preparation of meals or whether the meals should be sent up on trays is a problem for each superintendent to decide. A typical floor pantry is illustrated in Fig. V which has steam table, sink, cabinet, refrigerator and suspended shelves for food trays. The plan shows the width from eight to nine feet. Eight

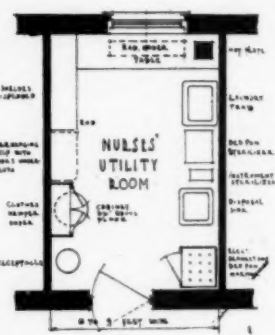


Fig. 7. Typical utility room.

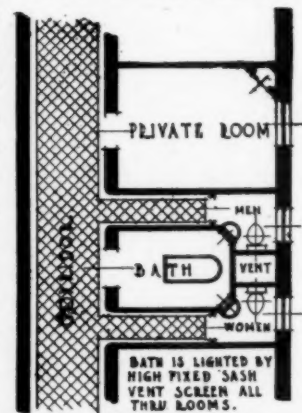


Fig. 8. Toilet and bath.

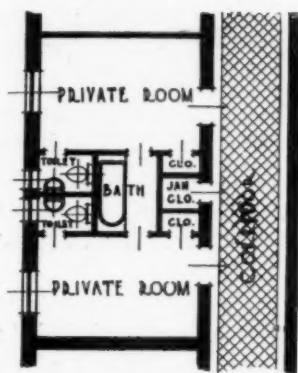


Fig. 9. Economical toilet arrangement for private rooms.

feet should be considered a minimum. There should be a laundry if possible. Fig. VI shows one plan, the arrows indicating the routing. First comes the receiving room with shelving for supplies. This leads into the wash room with two standard laundry trays, a gas stove and starch cooker, a washer and an extractor. The clothes then go into the dryer in the ironing room. Here is a mangle, an ironing board, a press and a sorting table close to the exit to the hospital. Power washers should be free from any belt drive on the ceiling as the vibration is apt to disturb the sick.

The one room of utmost importance is the nurses' utility which requires great care in equipping (Fig. VII). There should be in this room a bed pan and blanket warmer, a disposal sink, and instrument sterilizer, a bed pan sterilizer, a laundry tray, a table with gas plate, shelving for various kinds of apparatus, a shelf with hooks underneath, place for a laundry hamper and a red cross receptacle. It is better to discard the clothes chute entirely unless funds permit the installation of one of enameled iron, arranged for thorough and easy flushing.

Toilets for men and for women should be provided on each floor, and there should be a general bathroom distinct from these. Many methods of placing toilets and bath to provide proper segregation with the maximum of economy have been tried. An arrangement is shown, Fig. VIII, where one vent shaft and one plumbing stack will serve toilets for both men and women and a combination bathroom, and will separate completely all three. Experience has shown this to be thoroughly practical. One general bathtub serves as

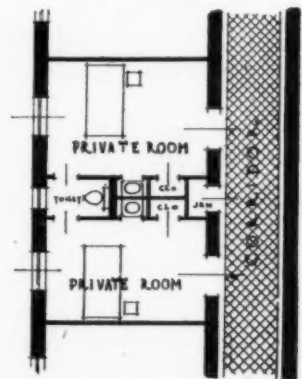


Fig. 10. Typical private room and toilet arrangement.

many patients as the two toilets. Two tubs would be uneconomical in space and plumbing fixtures. The high priced private room should have its own toilet and wash basin and in some cases a bath. However, as a bath is not in great demand in a hospital, it can be arranged as shown in Fig. IX be-

tween two rooms with independent toilet and clothes closets in connection. The bath may be lighted by high windows in the partition. An arrangement without the bath, somewhat simplified and yet quite popular, provides a toilet in common between two rooms, each room supplied with its own wash basin. (Fig. X.)

It is desirable in each private room to provide a hat and coat closet. The ordinary square or rectangular closet, it is often found, projects into the room, spoils its appearance, and interferes with the arrangement of furniture. Fig. XI is the plan of closet made by cutting off a corner. This closet is small but sufficient for most needs. The floor is kept up to the height of the sanitary base for ease of cleaning; all corners are rounded.

Two plans of the nurses' station are shown. In Fig. XI it is located in the corner of the halls. This space is usually difficult to utilize. Here is a telephone, a rack for records, a special case for

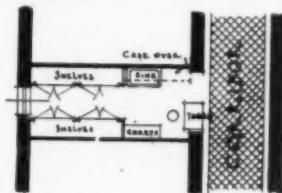


Fig. 12. Nurses' station.

poison with lock and key, a table top of white glass with lockers under and a case with drawers over a small sink. Another type is shown in Fig. XII where the station is close to the linen rooms, this

plan is especially suited for long straight halls.

Some small community hospitals will require an out-patient department, and it would be well if more hospitals had them. Fig. XIII illustrates the necessary separate entrance, the dispensary with a room for the pharmacist and stairway to basement supplies, the general waiting room with settees, tables and information desk, the doctors' offices with a special arrangement for eye, ear, nose and throat treatment, the medical library

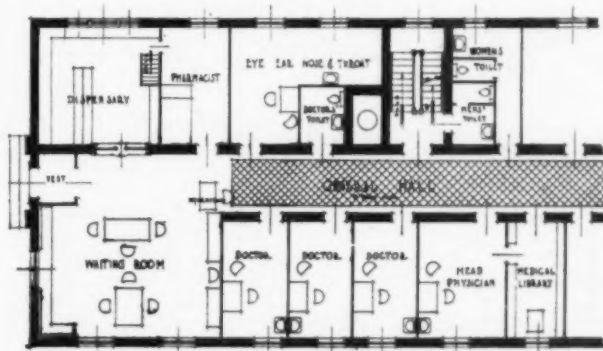


Fig. 13. Out-patients' department.

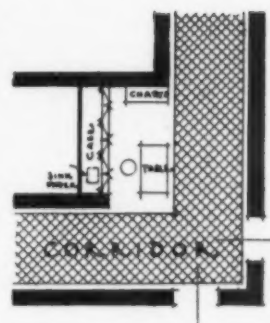


Fig. 11. Nurses' station.

and separate toilets for doctors and for men and women.

Mention should be made of some other rooms frequently overlooked. There should be near the ironing room, or in or near the linen room, space for sewing, with electric outlet for a sewing machine. Hospital plans should not overlook a room for storage of screens and storm windows, as well as space for a vacuum cleaner, and for repair work, a room for wheel chairs, beds, and other large pieces of furniture, and a room for hospital records.

Only a word as to material. Brick will in most cases be found the best material for the exterior. Hard burned vitrified and light colored, the modern brick is both inexpensive and attractive. Hospital builders have for many years experimented with floors, all things considered, including price, a well laid and well kept terrazzo floor in rooms, halls, and stairs will give the best service. If linoleum runways are laid in the halls these will allow

greater quiet as the hard plaster necessary in hospitals, the absence of hangings, the small amount of wood and the freedom from beams and other breaks tend to make them noisy. It is advisable to use as little wood finish as possible and to have all surfaces smooth with the least number of projections requiring cleaning and dusting. It goes without saying that all plaster corners and angles should be rounded.

The hospital board also will have to consider the decorations, as few people are satisfied to spend night and day in a room with bare white walls. The color scheme should be kept as light and cheerful as possible; a simple artistic stencil near the ceiling will help rather than disturb the average patient. Cream, buff and light yellow are the best colors for north rooms, and French gray or light green for sunny rooms. Blue and pink should be avoided. To use high colors, like red, to any extent is a serious mistake. If used at all, let it be sparingly.

SOME PRINCIPLES OF HOSPITAL STANDARDIZATION

BY JOHN G. BOWMAN, CHANCELLOR, UNIVERSITY OF PITTSBURGH

THE American Conference on Hospital Service was created, among other things, to increase cooperation among medical and hospital societies, to prevent waste and to put an end to duplication of effort. That was three years ago. The purposes did not seem very thrilling. And yet as we look back now over the three years some thrilling results stand out. Cooperation and good will are a reality; the possibility of duplication is gone; and, best of all, it is now unthinkable that in a spirit of rivalry or self-advancement one society could enter another's field of endeavor.

The Conference has accomplished more than we thought possible. But how was it done, for the Conference has shown little initiative? The answer is that Dr. Frank Billings took the leadership of the Conference. That fact alone has kept the members of the Conference on their best behavior. We are in the habit of being good. All of us are much in debt to Dr. Billings.

But to get to my subject, the principles of

"The hospital is at one and the same time a practical, a scientific and a moral institution. The idea of the hospital as a center of powerful morality, stripped of all thin sentiment, is one which we must keep strongly forward in standardization. Whenever hospital service detects human illness and relieves it, the service is essentially moral. Further, the idea of happiness is not separable from the practical transmission of good. The sum total of a sound program of hospital standardization is, then, that it carries forward and tends to complete the life-equation of the individual practically, scientifically and morally. It fuses happiness into the day's work so that work is an inspiration."

hospital standardization, which was assigned to me by Dr. Billings. The subject means, if we are to deal with it here in a practical way, a consideration, first, of what we want in hospital service, and second, of the means to get what we want. Both of these considerations require that we have a basis upon which to observe, to select and to put our intelligence into action in such a way that an ideal hospital service advances in an

orderly manner toward reality. The principles of hospital standardization are the summaries of common sense which permit foresight of right service.

Aim of Standardization

But foresight is an elusive thing: In a program of hospital betterment it implies, as just stated, the perception of an ideal hospital service, and this must be a practical outgrowth of existing hospital conditions. It seems to be plain sense therefore that we should make clear to ourselves at the start the principles or basic assump-

tions through which hospitals have come to their present conditions and through which they may seek further progress. Some of these principles are as follows:

1. The aim of hospital standardization must lie within the purposes which the hospitals have consciously set for themselves. If the dominant purpose of hospitals is to provide for the sick or injured the best care known to medicine, then the aim of hospital standardization must be to provide the best possible care for the sick or injured. To put the matter in another way, let us suppose that you, representing one or more medical societies, choose a program of hospital standardization which is foreign to existing purposes of hospitals; and that, for example, your program consists of research in bio-physics. Such a program is defeated at the start. It is defeated because, lying outside of the purposes of hospitals, an aim like this amounts to arbitrary dictation from those outside of the hospital to those inside of the hospital. It fails to relate what they *ought to do* with what they *desire to do* and is therefore a futile program. Research in bio-physics, however valuable it may be to medicine, is not now included by hospitals as an essential in the right care of patients; and until it is perceived as a means to such an end it will be a foreign issue and an impracticable issue in hospital standardization. It lies outside of the purposes which the hospitals have set for themselves. Unless the program impels consecutive action which is the expression of the mind in foresight, it can not succeed.

Program Must be Flexible

2. But granted now that your program lies inside of the purposes of hospitals, the next principle which arises is that that program must be flexible. The influence of scientific research during the last twenty-five years upon our ways of progress is here a helpful thing. It has brought home to us the value of a mind flexible in its action. Under this influence rules of conduct and rules of administration have given way to principles; and principles are now giving way to understanding. All action in the hospital should complete, or carry on toward completion, service in the proper care of patients. Such a process cannot be formulated into a set of rules. It must not be a rigid process. If the initiative of those working in a hospital is to be kept alive, the free play of their intelligence must also be kept alive. This means, first, that the objective, the mark for future attainment must be clear, or, let me say, radiant. It means, second, that the mark for future attainment must influence or suggest each action in the hospital; that each action is related to the mark. It means, third, that in this process of

attainment to the mark a constant series of alternatives will necessarily arise which call for judgment. The free play of intelligence is forced into action. If results now strike closer and closer to the mark, nothing more is required. The flexibility of the program is the basis of incentive, of happiness in work and of success.

3. While the aim of any successful program of hospital standardization must be flexible and must allow the free choice of alternatives to the individual, the individual must nevertheless be accountable for the intelligence of his actions or for his failures to act. The accumulated experience of the medical profession indicates treatments, operations or techniques, which have proved to be most sound. For understanding of this experience the doctor is accountable—accountable to his own conscience, to the medical profession and to the society whose trust he holds. In the treatment of patients there is no place for the trial of luck, for guesses, for laxness and laziness, for unintelligent enthusiasm or for mere aspiration. An intelligent doctor has the power to perceive the present conditions of his patient and to refer those conditions to probable consequences. Otherwise he is unfit to be trusted. He is accountable for his capacity to act and for his actions.

To summarize these three points which, as it seems to me, are essential in any sound program of hospital standardization: First, the purposes of the program must lie within the purposes which the hospitals have already made their own. Second, the program must be flexible, permitting free action and free play of intelligence, the guide being not a set of rules but a mark for future attainment. Third, the program must require responsibility and accountability on the part of each individual privileged to take part in the program.

If now these points seem too obvious to need review, let me call your attention to the fact that years ago the following subjects were seriously suggested for inclusion in a national program of hospital standardization: Financial accounting; uniform nomenclature; post-mortem examinations; the education of patients in the hospital; the hospital library; the testing of materials before purchase; and the means of financial support. While all of these subjects are of interest to the hospitals, the extent to which they are appropriate for a real program of standardization may be tested by the foregoing principles.

But to return now to the matter of responsibility. Here we have the very heart of the practical problem of hospital progress. The hospitals were created by society. They were created at first merely as convenient centers for the care of

the sick or injured. Then, especially in recent years, society came to realize that medicine outdoes in human value all other professions. The idea grew that hospitals are the apparatus of the medical profession for the production of happiness, the relief of pain and the cure and prevention of illness and injury. Then, further to the credit of the medical profession, the idea grew that hospitals are accountable to the public for the right care of every man, woman, and child admitted as a patient.

Important reasons for this modern conception of the hospital seem to be:

1. More numerous and varied interests which society assumes today in the control of business enterprises. The business man now participates in many interests and in so doing has learned to refer his own actions to others and to accept responsibility for others. A keener sense of the responsibility on the part of hospital trustees and of doctors for the character of service in hospitals is therefore natural.

2. Workmen's compensation laws have brought into public review the effectiveness or ineffectiveness of much medical service and have stimulated among hospitals the sense of responsibility. For example, one-third of the applicants for state compensation last year in New York State, I am informed, presented histories of wound infection. Were these infections unavoidable? Were some of them due to carelessness or to ignorance of proper treatment? Surely the hospitals in which these cases were treated are under obligation to know the answers to these questions. They are under obligation to create conditions in which they can answer such questions with pride if such conditions do not now exist.

3. The advance of the science of medicine in the last quarter of a century has created a wide and natural discrepancy in the training and skill among doctors. The individual who becomes ill or injured and who at least suspects the range of competence in the profession desires some check upon his selection of a doctor for his need. His desire that the hospital serve as a guarantee of the service he is to receive is natural and reasonable. An analysis of 3,000 cases of fracture of the femur recently disclosed that only ninety of these cases recovered with a ten per cent or less disability. Is the medical profession content with these findings? How is the man or woman with a fractured femur to find the most skilled treatment? The answer to this question lies in the organization of hospitals the staffs of which respectively bring their combined intelligence to bear upon every case where the need is indicated. By this step the medical profession makes a more vital contact with the public than ever before.

In the idea, then, that the hospital is both responsible and accountable for the care of its patients, let me repeat, we have the heart of standardization. The regular staff meeting with its review of work done, adequate laboratory service, and the keeping of case records are merely the machinery through which the hospital accepts its responsibility and checks up on its performance. In all of the program the doctors are in control. Principles only, or the mark of attainment, are insisted upon. All such matters as the open hospital or the closed hospital are for each individual hospital to settle.

In conclusion let me say that hospital standardization is an educative process and that as such it is all one with a moral process. Whenever service in a hospital detects human illness and relieves that illness, the service is essentially moral. It is the transmission of good. But the service is also a scientific process. When the doctor in his day's work realizes that the application of medical science is the transmission of good and that it is therefore the very substance of morality; when he realizes that in his work the practical and the ideal are fused, he has come into his own.

The hospital is at one and the same time a practical, a scientific and a moral institution. The idea of the hospital as a center of powerful morality, stripped of all thin sentiment, is one which we must keep strongly forward in standardization. Further, the idea of happiness is not separable from the practical transmission of good. The sum total of a sound program of hospital standardization is, then, that it carries forward and tends to complete the life-equation of the individual practically, scientifically and morally. It fuses happiness into the day's work in such a way that work itself becomes an inspiration.

DIRECTOR OF UNIVERSITY HOSPITALS

The appointment of Dr. L. S. Schmitt of San Francisco as director of the University of California Hospitals has recently been announced. Dr. Schmitt is acting as dean of the University of California Medical School, the university hospital being the teaching hospital for the school. The educational institution also owns the Hahnemann Hospital in San Francisco which maintains both a private and a public service, the latter being mainly for industrial cases. The University Medical School is further affiliated with St. Luke's Hospital and the Children's Hospital in San Francisco.

"I do not believe in any philanthropy which is not in fact what the word means—the love of man. But the knowledge of a man must go before the love for him—acquaintance, friendship, love can only come from sympathy and a close and accurate knowledge of the ways, the habits, the lives of the poor—not a mere sentiment, but an active and fruitful enthusiasm."—Florence Nightingale.

INSTITUTIONAL FARMS AND GARDENS

BY WALTER E. WRIGHT, ASSISTANT DIRECTOR, THE BURKE FOUNDATION, WHITE PLAINS, N. Y.

MANAGERS of new institutions and of established ones which are situated in open country or have unused land areas repeatedly bring up the question of more gardening or general farming upon their plots. The proposals, usually made by new members, appear enticing and it is often wondered why the superintendent and others with experience advise delay or caution in the matter.

A recent collection of figures, general statements and personal opinions from those in charge of twelve institutional gardens and farms within our fifty-mile radius leads to the conclusion that they average an actual slight to moderate loss over a series of years. In most instances the agricultural accounts are not accurately kept, and precise incomes and expenditures are with difficulty separated from the general running expenses mainly because of the intricate, and proper, interactions with the other activities. The larger state insane and custodial places are not included in this study, but scanning and just interpretation of their reports will disclose surprisingly narrow margins of farm profit or loss, even though they are favored with abundant free or part-free labor.

Certain general facts partly clear the problem in the beginning. Small private farming on the average and under the favoring conditions of home-group and long-hour help yields good livings only, with but scant, if any, net income; most institutions in question are located suburban to cities and are wholly under the influences of high wages, high cost of material, short hours and the accepted inefficiencies of this environment; the soil available is apt to be "run-out." "Plant-enemy"

and the various neighborhood depredations are here at their height. The rapid subsidence of the "war-garden" effort applies here; many factors have of course caused this, but the main one is that it didn't pay. The people are not slow to stop a money loss, nor in further developing a clearly profitable work near at hand. New managers of institutions who so often propose to "grow their own vegetables and save much expense" are measurably mistaken.

Gains Outside of Money Profit

Why, then, do the older places continue to conduct gardens and general farming? Because of definite gains other than money-profit. Should new country health institutions, large or small, plan some tillage of their land? Yes; and mainly for the following reasons: "vegetables from our own garden," the "pure milk of our dairy," etc., are phrases back of assured values and mean advancement for the institution; the sight and feeling of an abundance of these particular products induces in practice a better balance of institutional diet, as noted especially in the light of the newer food facts (cheaper vitamins, etc.); employees, too, appreciate the combinations and are more contented; a balanced amount of this land culture makes feasible a better staff for house and grounds care and the many intermediate duties. (Details of many advantageous "help" combinations, extending from garage and stable through land-care into heating plant and house service, will suggest themselves.) Tillage gives charm and finish to the neighborhood as compared with unkempt areas, and supporters of the



Cardiac adolescents under supervision are strengthened and group-trained by garden work.



A group of stronger, hungrier boys returning from their work at the convalescent farm.

establishment like to see it in such full-rounded adaptation; tax exemption not infrequently hinges upon the full or part use of the property for the charitable and remedial purposes, and good-feeling may be upbuilt by gifts of surplus product in season to neighboring charitable organizations.



Women patients, especially those who are nervous or depressed, are helped by outdoor occupational exercises.

But of more importance, perhaps, than any of these is the occupational and mental therapy which farm and garden may furnish wherever the patients are convalescent or but partially handicapped, physically or mentally.

Farm Labor Proves Good Therapy

It is not practicable to try to present accounting figures of the institutions in the present inquiry, further than as summarized in the beginning. A very large private hospital for mental diseases, having a long-established organization with large acreage, reported profits one year and losses another, one made first claims of big profits which analysis mainly dissipated (a common error); milk production in the larger plants seemed to present most general satisfaction. Each place has found by experience a suitable ratio of garden to other activities, and none would quit the procedure because the sure auxiliary advantages outlined above outweigh moderate monetary losses.

The Burke Foundation's Convalescent Home, maintaining 300 patients and 100 employees upon a sixty-acre plot has, after seven years' experiment and fairly accurate accounting, settled to a ten-acre farm-garden with no live stock. Monetary profit of a few hundred dollars per year is figured for the whole period, but this fails to take account of the various depreciations, insurance, etc. Value of the yearly product has been from \$3,000 to \$5,000; about one-third of all the fruits and vegetables used are thus supplied. The organization has been simplified until one head has charge of the garage, gardens and grounds. The obstacles to precise garden accounting are well illustrated here by the frequent changes of men

and horses from garden to lawn-care, to transportation of patients and supplies, etc. Many patients working moderately one or two hours per day have benefitted health but not farm expenses to any extent; a part-pay occupation for some as they gain strength has proved good mental and physical therapy only.

Dietitian and Gardener Must Cooperate

Kinds of crops raised will depend upon land, labor, possible interacting organization and equipment, and the appetites and needs of the particular patients accommodated. A list for this zone may be approximated: lettuce, sweet-corn, onion, radish, tomato, carrot, turnip, parsnip, parsley, cabbage, celery, rhubarb. Potatoes are best bought unless exceptional conditions obtain. Asparagus, strawberries, etc., may come into favorable schemes. The technique does not always closely follow that of the market gardener but aims to arrange crops so that horse can do most of the work, the labor-cost being ever paramount in suburban environment. Artificial fertilizer is used freely in lieu of cheap barnyard manure; plowing under fertilizer crops is worth-while at times.

A very common cause of dissatisfaction and partial failure is lack of hearty and painstaking



Patients' farm occupation, if well supervised, aids in convalescence. Extra protective clothing is needed.

cooperation between dietitian and gardener, resulting in wrong plantings and crop rotations, surplusage, kitchen waste, expensive seasonal lacks, and at times unbalanced diets; someone placed over those in charge of each section obviates this. We concur heartily with the institutions canvassed in saying that we would continue the gardens even at a moderate financial loss for the sake of the health and contentment and sentimental gains accruing thereby, as indicated previously.

THE VALUE OF POST-MORTEM EXAMINATIONS AND METHODS OF OBTAINING THEM

By E. M. BLUESTONE, M.D., ASSISTANT DIRECTOR, MOUNT SINAI HOSPITAL, NEW YORK

BROADLY speaking, no hospital is larger than its pathological laboratory. According to modern standards, the ability of a hospital to cope successfully with the clinical problems which its patients present is measured by its interest in the laboratory phases of disease. We refer to the laboratory spirit in the widest application of the term, and one which embraces the idea of the clinic as a place where the study of disease is carried on in the form of continuous research with the ultimate purpose of preventing every pathological entity under the sun. The quintessence of this spirit is in that part of the laboratory in which clinical failures—and, rightly looked at, every death is a clinical failure—are checked up, and where every autopsy performed carries a moral as well as a scientific lesson for the medical idealist.

A hospital in which the laboratory is relegated to a small room where a few perfunctory routine "bloods" and "urines" are done is no larger than that room because of its helplessness in the handling of cases which are not of the classical textbook type. The progressiveness of a hospital is in direct ratio to the laboratory spirit which it maintains, but a hospital of this routine type must follow blindly the teachings which arise elsewhere. It cannot lead. It is, therefore, no exaggeration to say that waste of clinical material in which the hospital has failed to cure is, from a broadly human point of view, morally wrong. The fact that discoveries in the realm of medicine and surgery are not in proportion to the amount of available clinical material is striking and calls for serious thinking. It is time to stir the clinical conscience of the profession.

Death Means Medical Failure

When a patient dies from any cause, except possibly old age—and old age is another medical world that is still to be conquered—medical science confesses failure. The fact that we have

"The administration of a hospital, I cannot repeat too strongly, should have a well defined clinical point of view. Its eagerness to keep faith with those who die by a process of carefully checking up the failures of the clinic should measure its value to the community. There are many psychologic aspects to this business of asking consent for post-mortem examinations, but every case must be regarded as a problem in itself. We must expect that a large number of requests will be refused, but if they have been handled properly, no hospital need admit failure in these cases. If a negative reply is accompanied by an appreciation of the merits of our appeal we win."

not yet mastered certain diseases does not alter our contention of failure. With this as our major premise we proceed with the argument that the hospital is under a moral obligation in all cases to make every reasonable effort to determine the exact cause of death. Since "facts are the trump cards in the great game of science," the method must be one of direct observation of pathologic processes and not a species of guess

work which is the outcome of an ultra-vivid clinical imagination. At the present time Bacon's remark that the medical sciences are more professed than labored still holds true. Failure in one case should bring a reinforced sense of our responsibility toward the next case.

In the course of our plea for consent to perform post-mortem examinations, we are frequently confronted with the argument that the case in point is not the first or only one of its kind and that many others have suffered similarly. But we hold that no two cases are exactly alike, and that even if they were alike, the necessity of establishing a logical series of cases with similar pathologic findings is an important consideration. The diagnosis being known, where is the cure? No finding is considered too small. Every increment to our knowledge of abnormal processes is important, if this wonderful human machine is to be engineered properly through life. And we may further ask if only those deaths must be investigated which occur in patients who are friendless. Is not the unknown soldier in the battle of life entitled to as much consideration as he whom fortune favors? All who serve the living after death are doing nobly; we should educate ourselves to believe this and to cry it from the housetops. We should teach at every opportunity that it is a great human service to sign consent for post-mortem examination. The profession must accept the responsibility of helping to free the less enlightened mind of a few imaginary ogres and hobgoblins. To the intelligent

relative of the deceased, superstition may perhaps best be described biologically as a survival. Is not the body consigned to the earth, where its fate is of much less consequence to those who might be benefited by an honest inquiry into the cause of the Great Tragedy?

Ethical Standards Far Behind Microscope

Coroners are instructed in the interests of the community to autopsy cases in which the cause of death is "unusual or suspicious." One may well wonder how this responsibility ought to be interpreted. What, for example, are its limitations? We may properly ask whether the human family in our country may not be legislated into a state of affairs such as already obtains in certain European states to which American physicians flock in order to learn pathology. Lawmakers have occasion to substitute compulsory legislation for voluntary education, where less grave dangers threaten, as for example, in preventing the traffic in poisonous drugs. Constitutions are happily subject to amendment. It is one of the endless tragedies of our civilization that our ethical standards are thousands of years behind the microscope. There is a certain fatality in our refusal to grasp opportunities. What will the judgment of future generations be when they look back on some of the superstitions of the present time?

In pleading for permission to perform post-mortem examinations we must possess a certain amount of confidence in our ability to learn from a given case, and we must, therefore, start with the assumption that we can find the cause or, if the diagnosis was reasonably sure before death, a cure for the particular disease from which the patient unfortunately died. In many instances we fail because we still lack instruments of sufficient precision or because of our inability for various other reasons to correlate certain pathologic changes. We may not find the cause or cure the first time, but our efforts are justified by virtue of the fact that we add to our fund of knowledge with every case, and success must be sure if we persevere. The history of medicine furnishes abundant proof of this contention.

The philosophy which underlies the post-mortem examination must, however, be clear to the progressive medical mind. Kingsley's remark that science is its own reward is self-evident. Unfortunately, one meets in medical circles, too, with sentiment and superstition combined to produce a truly medieval state of mind. I have a very clear recollection of one family physician on whose advice much depended, but whose mental eye "would not react to either light or accommodation." To many, autopsy means desecration

and mutilation, and with these the utmost gentleness and sincerity of purpose are required to bring about a change of mind.

The time for asking consent of the family must be judged in each individual case. The majority of our cases respond better to an appeal of this sort on the morning after the patient died, when the edge of their grief has had time to become dulled. The feelings of the family are hurt least when their minds have had an opportunity to become adjusted to their loss. In a few instances we have succeeded in getting consent ante-mortem, when the near relative, in the presence of suffering, was in a generous mood toward his environment, but these were mostly wound inspections in surgical cases.

In starting an appeal for post-mortem examination, the near relative (and the choice of the most intelligent near relative, where this is possible, is of the utmost importance) must be convinced that the hospital which cared for the patient did everything in its power to save his life. We frequently point to the chart as mute evidence to prove the magnitude of the hospital effort. The volume of the history, the entries by men of high standing in the medical community (and every educated doctor in the community who gives freely of his time and knowledge to relieve the suffering of the poor is, strictly speaking, of high standing), the large number of laboratory examinations performed (and in private practice these are very expensive), the tender care of the nursing staff, all point to the fact that the hospital left no stone unturned in an effort to save him who died. These points are brought home in a kindly spirit of sympathy, and it is well to remember that if the request is not made sincerely and wholeheartedly, one might as well save his breath. In no case is anger or an impatient attitude justified. The right to refuse consent is, after all, inalienable, and from a much broader standpoint a negative reply may be of great value, if the reasons for our plea are made clear. We have been told by relatives again and again that our reasons were appreciated, but. . . . It must be kept in mind that a family antagonized is a source of danger to the progressive hospital spirit in the community. Our effort must be continuous. "Truth is like a ship whose prow will cut through the waters of falsehood, but will not prevent them gathering in its wake," if we may be permitted a quotation from Goethe.

There must be thorough coordination of the clinical and administrative organizations of the hospital and the greatest amount of tact and strategy in handling what is undoubtedly a very delicate situation. We frequently call upon the house physician or surgeon to initiate the argument, and

the disinterested representative of the administration or the social service department, both of whom have previously given every evidence to the bereaved family of their interest, steps in at the crucial moment. Every individual must be judged apart and with a keen recollection of former experience. Different types of mind require different forms of approach, and the whole affair is an interesting though somewhat trying problem in psychology. Upon the solution of this problem depends, in a large measure, the future of pathology.

After the preliminary steps of winning the confidence of the spokesman for the family, it is pointed out that by a careful post-mortem study of the case it may be possible in the future to spare others in similar circumstances the same pain which the patient suffered and which the family now endures. To spare the feelings of the family, words like "autopsy," "cut," "knife," and "organs" should be studiously avoided. Instead we ask for a "post-mortem examination," an "opening," etc. The impression which we try to create should be an ideal one. The body opens up before our gaze, and the diagnosis made (sometimes from a small section of the cancer) or the cure found (occasionally by a vaccine to be prepared from the pus, the presence of which was previously suspected) closes up again, having revealed the clinical mystery and conferring, perhaps, untold benefits on future generations. We try to stir generous impulses by a careful discussion of the humanitarian aspects of the case. The responsible relative convinced, it is important to get prompt signature before other members of the family appear to raise fresh obstacles. There is danger in numbers because one stubborn individual may upset the best of plans. It is a hopeful sign that one rarely sees a family in which all the members object to post-mortem examination.

Doctor Nearest Case Should Put Request

Whenever possible the house physician or surgeon should be required to obtain consent and should have the universal encouragement of all elements in the hospital. There is a great deal of value, aside from the momentary success which may attend his efforts, in giving the physician who is nearest the case an opportunity to convince the family of the justice and wisdom of his request. Hippocrates might have made this a condition to his time-honored oath. And the ability to convince may, for obvious reasons, be taken as an index of the future success of the doctor in the community. It is a measure of his medical idealism at least.

Two cardinal humanitarian arguments used

frequently in our hospital may here be given. When a variety of other forms of persuasion fails, we ask how would he decide who has just passed away if he were not given the opportunity to speak. If he were assured that others could be spared the same pain and suffering which he has just experienced by an examination of his body, what would he say? Here is another. If a brother of him who died were, unfortunately, to fall a victim of the same disease, and if the saving of his life depended on what could be learned from a post-mortem examination of the lifeless body, how would the family decide? And if the answer is in the affirmative for his own brother, why not for some one else's brother? There are always a number of similar cases on the wards which might be benefited by this generous act. One never knows who is next. It might be the one spoken to or his medical interlocutor. We should tell relatives that our duty as honest physicians does not end with the death of a patient, but that it really begins toward the next man who knocks at our doors for relief. We do not want to stand helplessly by the bedside of the next case as we did in this. Just why did death end the unequal struggle? To the more enlightened mind, the argument that if a negative answer were the rule medicine would still be in the Dark Ages appeals, and here we may dilate on the achievements of modern medicine.

Occasionally we exhibit permission slips as evidence of what others have done in similar unusual cases or tell of what other intelligent people have done who were generous enough to be governed by purely humanitarian motives. We are attempting here to lay down general principles for the guidance of those who would seek consent for autopsy and all arguments given require elaboration. The number of successes depends, in a large measure, on how much the hospital understands the mental makeup of its own patients and their relatives. We have already said that it is the duty of the hospital to ask. The clinical conscience thus awakened, the lay conscience may be expected to fall in line.

Partial Autopsies More Easily Obtained

Complete autopsies are always desirable, but partial autopsies frequently are satisfactory to the clinician and are much more readily obtainable. An abdominal incision in medical cases or a wound inspection in surgical cases thus teaches as much as an autopsy if performed properly. And when the request is made, we must be sure not to exaggerate the extent of the examination. Gentleness is an indispensable prerequisite to success. The fact that we are not asking for a complete autopsy must be carefully impressed on the

family. We desire only the sort of incision that is sometimes made in an operation for appendicitis, the kind that would have been made during life if operation had offered any hope of a cure. In surgical cases we ask permission to reopen a wound already permanently present. The wound is carefully closed after examination, and leaves a cleaner line of closure than if the wound had been left gaping with several drainage tubes in place. The pathologist must cooperate by bringing about as nice a cosmetic result as possible. For the sake of the embalmer, whose help we may look for in future cases, all important vessels are tied off. The undertaker should be consulted about the proper way of doing this, as well as about other matters relating to the disposal of the body, and it is important to apologize to him whenever any delay in his activities is brought about. Unfortunately for the pathologist, the business of undertaking is subject to the rules of commerce. Friendly undertakers have helped us to obtain consent when they were convinced of our desire to cooperate. Conscientiousness in the autopsy room is important, if we are to be sincere in our considerateness for the feelings of the family.

When the undertaker looms large in the negotiations, the method of procrastination should be used with great care. Yet we have succeeded on several occasions in winning consent where all other arguments failed, when we told the family that some of the professors (every attending physician or surgeon in certain sections of the community is called "professor") had expressed the desire to meet them personally in order to make sure that the entire matter was made clear to them. The doctors who attended the patient in his last illness are entitled to this courtesy, it is admitted. Occasionally a note from the attending to the house physician asking him in the name of all that is human to place the whole matter frankly to the family is exhibited with beneficial results.

Religious Objections Easily Overcome

We find in our hospital that objections on religious grounds are surprisingly few and those presented easily overcome. Mount Sinai Hospital has many Jewish patients, yet we have been fortunate enough to obtain consent for partial or complete post-mortem examination in about 270 deaths during the year 1921. This figure represents 56 per cent of all ward deaths, excluding coroner's cases. In other words, we were unable to explain 44 per cent of our deaths except by indirect evidence. This figure represented our scientific deficit for the year. During the six month period beginning March, 1921, consent was obtained in 64 per cent of the cases, and we

regard this as the more representative figure, since it does not embrace the period in which the organization for this special purpose was being developed. In one series of 100 consecutive deaths we obtained consent in seventy, and in another series fifty out of sixty-eight.

Religious objections are not difficult to refute. To our knowledge there is no religious law which forbids autopsy where a definite step forward in our understanding of disease can result. Rabbis and priests have told us so. It is important to bear in mind that there are few cases, if any, in which some gain that will benefit the next sufferer is not made at autopsy. Father Moulinier, president of the Catholic Hospital Association, in his address at the hospital conference of the American College of Surgeons on the standardization program, said, "Thirteen deaths in the past month mean nothing. Why did each one die? So many unimproved in the hospital mean nothing. Why are they unimproved? What has been the use of the laboratory? Why haven't we had more autopsies?" Religion to the more intelligent has a broader aspect, and it is fair to start our plea with the assumption that the family is free from superstition.

To those who are pious an occasional quotation is justified. "Though I give my body to be burned and have not charity it profiteth me nothing." To the much less enlightened mind and one that believes in a hereafter the scene of Judgment Day may be evoked in a telling manner when the relative is asked how he will make answer to his God for refusing consent to a step which will bring relief to his brother who is in pain. If the man hesitates "for conscience' sake" we ask what sin he thinks himself committing—is there not something religious in the feeling of pleasure which the opportunity to serve thus should give?

I recall the story of an intelligent middle-aged woman who was said to have promised her dying brother that no autopsy would be performed on his body. The office was informed of the futility of argument. But we had a great deal of faith in the intelligence of the sister and decided to make an effort. Most of the arguments here enumerated were presented, and we then asked what would be the decision if the dead could speak. Was not the patient's mind clouded toward the end and beset with groundless fears? How would he have decided in his clearer moments, fine fellow that he was? He had suffered for months, would he give himself now that it was all over? Must we by her refusal again stand helpless by the bedside of the next sufferer? If she could project herself into the future, how would she decide one year from now when her mind had become accustomed to her loss? The pathologists

little knew the effort made in this instance. Consent was given, and I am anxious to record that when the sister signed we felt we were in the presence of the most generous spirit in the world.

Always on Verge of Great Discovery

To return to the body of our theme, we should remember that in every case we are, theoretically at least, on the verge of a great discovery. The history of science justifies such optimism. In the course of our plea it might be stated that if the patient had died of pneumonia, we would possibly have refrained from asking for post-mortem examination, since the pathology of this disease is supposedly understood. And if the case happens to be one of pneumonia, the request may be made on the ground that most cases of this type get well. Why then did this one die? The pathology and bacteriology of pneumonia are by no means closed chapters, and this disease is still "Captain of the Men of Death."

The "blood-disease" argument, where heredity may play a part, or the plea of communicability in certain cases, frequently brings results. We must prevent other members of the family from contracting the same disease. It may be possible to start treatment in time with the next victim, so that a recurrence of the tragedy may thus be avoided. It is important in all events to tell the relative who signs consent that he will be expected to return after a reasonable time to learn just what was the cause of death. In an appeal of this nature such an invitation will win the confidence of the family.

Every Case a Problem in Itself

There are many more psychologic aspects to this business of asking consent for post-mortem examination, but every case must be regarded as a problem in itself. We have tried in these few notes to lay down basic principles and to set a standard. For the rest, every hospital organization must decide for itself. An ideal state does not exist at present, it is something to which we may look forward. But I cannot repeat too strongly that the administration of a hospital should have a well defined clinical point of view. Its eagerness to keep faith with those who die by a process of carefully checking up the failures of the clinic should measure its value to the community. We must expect that a large number of requests will be refused, but handled properly, no hospital need admit failure in these cases. If a negative reply is accompanied by an appreciation of the merits of our appeal we win. And Charles James Fox, the gambling English statesman, has said that next to the joy of winning is the joy of losing.

PENNSYLVANIA HOSPITALS NOW UNDER UNIFORM ACCOUNTING SYSTEM

A uniform accounting system for all state hospitals and those that receive state aid has been announced for Pennsylvania by Dr. John M. Baldy, commissioner of the department of public welfare. With the adoption of the system on March 1, Pennsylvania lays claim to the distinction of being the first state in the union to have uniformity in its hospital accounts.

Under the new plan sectarian institutions may receive state aid without violating the provisions of the constitution prohibiting the appropriation of state funds to such institutions. If there is a fixed price for service the state can purchase it from a sectarian institution just as it may go into the open market and buy supplies from the lowest bidder, regardless of his religious affiliations.

The working out of the new system, it is said, will mean that the state can ascertain the exact amount it should pay a given institution on the basis of the number of charity and part-pay patients. All hospitals in making reports, in place of listing gross expenditures including interest on borrowed money, must give the exact amounts disbursed for charity patients. Through such means it will not only be legal but feasible to make payments to sectarian institutions proportionate to the amount of charity work accomplished.

The act which created the Pennsylvania department of public welfare placed on the commissioner of that department the responsibility of recommending to the general assembly the amount of appropriation for each institution. A first essential in an intelligent plan of making these recommendations was a uniform system of accounting, Dr. Baldy believed.

The general scheme of accounting proposed by the Committee on Uniform Records and Reports of the American Hospital Association was closely adhered to in Dr. Baldy's scheme. Adoption of that scheme in its entirety was impossible in the state of Pennsylvania, owing to certain requirements of the auditor general's department. It was therefore deemed advisable by the department of public welfare to adopt for the hospital accounting system the general method of accounting well established in the normal schools of that state.

Printed record forms in a substantial loose-leaf binder are furnished free of charge to each hospital.

The new system is said to be meeting with the favor of hospital superintendents. Eventually the same general accounting scheme will be introduced into the mental hospitals and homes of Pennsylvania, it is declared.

BRUSHES GREET NEW SUPERINTENDENT

New superintendents in a number of hospitals have been receiving a large shipment of brushes from a New York manufacturing firm soon after they have assumed their executive duties. The more wary of these administrators have consulted the order sheets of their predecessors before accepting the shipment and have found, in most cases, that no such order had been placed. Warning is being sent by them to others in the field.

Pure wine, bathing, fomentation, venesection and purging, those five, were the remedies prescribed for those suffering with pain in the eyes by Hippocrates, "prince of physicians." Their relative order of importance is stressed by the Greek in a later work in which he says: "In pains in the eyes, after having prescribed the use of good wine, and of frequent warm collyria, we are to bleed."

PROBLEMS OF NOISE IN HOSPITALS AND HOW TO MEET THEM

By LAURENCE C. HART, S. B., CHICAGO.

IN VIEW of the increasing trend of professional thought covering hospital construction and operation, toward greater comfort for public and private patients, consideration must be had for mental as well as physical requirements. In the case of the latter extreme care is taken in providing cleanliness, sanitation, asepsis, proper ventilation and heating, wholesome and appetizing food. The mental comfort and welfare of patients are largely dependent upon a general quiet condition within the hospital building.

The whole development of building construction and building materials during the past twenty-five years has been in the direction of poor acoustics and, consequently, more noisy buildings have resulted. This is particularly noticeable in the evolution of the modern hospital building, where three main considerations demanded by public safety and health have had a radical influence on the choice of materials and the mode of construction—namely fire protection, sanitation and durability.

These demands have naturally led to the almost exclusive use of steel, concrete, tile and hard plaster, with a minimum of wood finish, steel often being used not only for trim but for furniture and equipment. The inevitable result has been an unbearable increase in noise, confusion and nervous excitement all of which have had a marked effect on the state of mind and personal comfort of patients. Actual fatigue of the nerves is engendered similar to muscular fatigue after physical exercise. This vitally affects the well-being of patients and in many cases offers a distinct handicap to prompt recovery from illness.

Sources of Disturbance

Ordinances are passed providing for "zones of quiet" in the vicinity of city hospitals. Such ordinances are not well observed, only indifferently so even under ideal conditions. More im-

How a quiet, almost oppressive, has succeeded the excessive noise that formerly disturbed patients at Mount Sinai Hospital in Cleveland is told in the accompanying article by Mr. Laurence C. Hart, of Chicago. The installation of a sanitary acoustical felt about ceilings and upper walls has made even the continual rumble of street cars unnoticeable to patients, while the organization among staff members and personnel known as The Society for the Prevention of Unnecessary Noise has partially eliminated noise from human sources. The laws of physics governing sound are stated and on the basis of these Mr. Hart explains methods of sound absorption which have proved successful.

portant is it to provide quiet conditions within the immediate confines of the hospital rooms and corridors. It is this last problem which is herein discussed.

In diagnosing the ailment, let us consider first, the cause; second, the effect; and third, the remedy.

Many sources of troublesome noise in a hospital contribute to discomfort. It is necessary to mention only a few examples, such as eleva-

tors, elevator doors, telephones, visitors, corridor doors, rattling dishes, conversation and general confusion in the handling of equipment, to say nothing of adjacent street noises. Such noises, following the recognized physical laws governing sound, are propagated largely through the atmosphere or open spaces, but also through floors, ceilings, partitions and structural building members. The problem of sound transmission through walls, floors and ceilings is greatly simplified by absorbing a large part of the sound energy near its source through the use of acoustical treatment. We shall, therefore, omit in this discussion the minor problems involved by sound transmission through structural members of the building.

Sound energy is propagated by means of spherical waves emanating from the source of sound as a center and passing through matter in the form of alternate pressure and rarefied pulsations. For each vibration of the sound source, there is one pressure wave and one rarefied wave. A vibrating object, therefore, such as a tuning fork, violin string or vocal chord, sends out a train of successive spherical waves. A plane section taken in any direction and passing through the point of the source of the sound energy would, therefore, reveal a series of concentric circles which submit themselves to scientific photography for analysis.

As we are discussing only that sound transmitted by means of the atmosphere within hospitals, rather than that transmitted through

structural members of the building, let us consider only the action of sound waves in a single medium, the air.

Any sound once generated within the confined space (room or corridor) of a hospital sets into action a train of spherical waves as described above, these sound waves traveling radially in all directions from the source. Such spherical waves travel at a uniform velocity of approximately 1,100 feet per second and are affected similarly upon coming into contact with any medium different in density from that of the air. For example, a sound wave upon meeting an obstacle such as a wall, floor or ceiling undergoes a transformation whereby its energy is distributed in three manners: it is partly transmitted through the obstacle, partly absorbed and partly reflected. This same transformation takes place for each of the successive waves in the series. The greater the density and the more impervious the obstacle, the greater the percentage of sound energy reflected. Especially is this so in a building of modern fireproof construction consisting of cement, marble, tile and hard patent plaster.

We are not concerned with the small amount of sound energy transmitted and absorbed, but we must attach great importance to the sound energy which is reflected because this reflected wave continues in opposite direction until it strikes another obstacle such as the opposite wall, the floor or the ceiling and the same transformation takes place again. This phenomenon continues until the residual sound energy is entirely dissipated. It should not be difficult to visualize the extreme degree of disturbance existing within a confined space between the time that the sound is generated and its energy entirely dissipated.

Method of Reducing Reverberation

A sound of ordinary intensity must be reduced to approximately one millionth of its original intensity before becoming inaudible. Sound waves lose only from two per cent to four per cent of their residual energy at each reflection from a surface of any modern building material, wood surfaces naturally absorbing at each reflection a larger percentage of the sound energy than hard plaster, cement, tile or marble surfaces. Therefore, several hundred reflections are necessary in order to entirely dissipate such audible sound. The period or time required for such energy reduction by multiple reflection of the sound waves results in the accumulation or piling up of the energy of successive sounds causing a vast increase in the general confusion and resultant discomfort. The rate of decay of this residual or accumulated noise is directly proportional to the

amount and efficiency of sound-absorbing material present. The term applied to this condition of residual sound or accumulated noise is technically known as reverberation. Reverberation can be calculated in terms of seconds and is technically defined as the period of time required for a sound to become inaudible after the source of sound has ceased. The duration being inversely proportional to the amount and efficiency of the absorbing material present, it is therefore, necessary to increase absorption in order to eliminate reverberation.

Science has developed a method of reducing reverberation which employs the use of a clean and strictly sanitary acoustical felt. This material can be applied against the ceilings and upper wall surfaces of rooms and corridors in a workmanlike manner, covered with a smooth and tightly stretched membrane, treated with a sanitary solution which provides a splendid decorative appearance and at the same time allows for repeated cleaning and redecoration. This construction, which does not in any way alter the interior appearance of the rooms and corridors treated, serves to eliminate by prompt and effective sound absorption the excessive and troublesome noises which ordinarily cause so much confusion and discomfort.

Installation at a Cleveland Hospital

As a specific example of hospital welfare work along the lines discussed above, kindly permit us to describe the direct practical application of these principles in one of the most modern hospitals of the country, Mount Sinai Hospital of Cleveland, Ohio. This hospital is a three- and four-story building with wings on each side of a central corridor. It faces the busiest cross-town car line street in the city, where car service is almost continuous day and night. Many of the hospital's private rooms face this street and, with the windows open, the noise from the street was quite a factor in contributing to the discomfort of patients occupying these rooms. The corridors were naturally very noisy, being finished with hard plaster walls and ceilings.

Last year the hospital authorities, after a wide investigation into this form of acoustical and noise correction, arranged for the installation of this system in the Mount Sinai Hospital. It was installed within the following rooms:

Director's office, associate director's office, accounting office, principal's office, telephone exchange, lobbies and nurses' stations on three floors, corridors on three floors, two reception rooms, fifty-eight private rooms, twelve utility rooms throughout the institution, nine serving kitchens, a children's ward, isolation rooms,

a nursery, a labor room and delivery room.

In all of the above locations the sound-absorbing acoustical treatment was applied over entire ceiling areas. In the labor and delivery rooms, it was extended to the side and end wall surfaces. The results were so efficient as to make the treated rooms extremely quiet, almost approaching a dead silence. Needless to say, the authorities, doctors and nurses are extremely well pleased with the splendid results obtained throughout but the principal benefactors are, of course, the patients whose welfare the authorities are exerting every possible effort to safeguard.

Street Noises Pass Unnoticed

A few examples of the direct benefits experienced might be cited. In the private rooms the windows may now be opened wide and the extraneous noise from the street and surface cars is so quickly absorbed by the ceiling acoustical treatment that it does not force itself on one's consciousness. In like manner, the talking and walking of nurses, attendants and visitors in the corridors is now so deadened that with the exercise of reasonable care in eliminating unnecessary noise, a state of comfortable silence prevails. The noise incident to the rattle of dishes in the kitchens and utility rooms has been eliminated to such an extent as to permit doors, formerly closed at all times, to be left open without danger of annoyance to patients in adjacent rooms and wards.

In one instance the head nurse made the statement that after the corridors had been treated the degree of quiet was so marked as to be almost oppressive. Furthermore one of the patients who had been in a private room before the treatment was installed and who has been there again since the room was corrected has remarked that the difference is nothing less than extraordinary and that he was delighted with the quiet, soft quality of the room.

The above system of sound absorption or noise elimination is intended to serve as a cure, or remedy at least, for the necessary and unavoidable noises both interior and exterior. However there are in addition many minor precautions that can be taken, small details in themselves but considered in the aggregate very vital toward eliminating preventable noises. It might be well to enumerate some of these as practical suggestions to hospital administrators.

The noise of slamming doors is usually prevented by the use of automatic door-stops. Elevator sliding doors can also be provided with cushions or strips of piano felt to prevent the sound of the metallic impact when the doors are closed. In some hospitals, small lobbies or vestibules are

located at all elevator entrances, these vestibules opening into the main corridors by swinging doors which serve somewhat as a barricade to elevator shaft noise.

In addition to the above concrete examples, there remains for consideration one very vital factor dependent for its success upon the human element; therefore it requires careful education of the hospital personnel.

Society for Prevention of Noise

In the Mount Sinai Hospital there has been organized among the members of the hospital staff "The Society for the Prevention of Unnecessary Noise." In line with this welfare work and as an assistance in the education of the hospital personnel, Mr. Frank E. Chapman, director, produces a series of bulletins designed to inculcate in the staff the principle of making as little unnecessary noise as possible. These bulletins are cleverly worded so as to attract the careful attention of all members. It is surprising to note the hundreds of apparently unimportant details in connection with hospital operation where contributing noises can be very easily eliminated with the exercise of ordinary and reasonable care. It is still more surprising to note the exceptionally satisfactory results that have been obtained in the aggregate from this campaign against unnecessary and preventable noises.

In conclusion, it is hoped that hospital staffs throughout the country will continue in their present endeavor to institute such campaigns both as relates to the operating personnel and to the proper equipment of hospitals with systems of sound absorption. The total results of such campaigns are bound greatly to improve general hospital conditions as well as individually to benefit patients. It is a very important form of welfare work requiring the careful thought and sincere consideration of hospital staffs.

LIBRARY SERVICE AT ROBERT LONG

So successful has been the public library service recently instituted at the Indianapolis City Hospital that Robert E. Neff, administrator of the Robert Long Hospital in that city, has requested an extension of the service to include that institution. Miss Lucile McCray, daughter of Governor Warren T. McCray, will be in charge of the library service at Robert Long Hospital. The Indianapolis Public Library inaugurated its book service at the city hospital last December.

DIETITIAN LEAVES SOUTHERN HOSPITAL

Miss Carolyn S. Kling, formerly chief dietitian of the University of Virginia Hospital at Charlottesville, was recently appointed chief dietitian of the Grace Hospital in Detroit and has introduced into all the departments there the serving of hot food from portable steam tables constructed on the thermos plan.

A NEW VENTURE IN SANATORIUM MANAGEMENT

BY GEORGE THOMAS PALMER, M.D., MEDICAL DIRECTOR, PALMER TUBERCULOSIS SANATORIA, SPRINGFIELD, ILL.

THE creation of tuberculosis sanatoriums has constituted one of the most interesting and, within the past two decades, one of the most spectacular and rapidly moving chapters in the entire history of hospital development.

For many years institutions for consumptives have existed; but there has been a steady and in recent years a rapid change in their policies and methods. Originally the hospital for consumptives was something of an asylum for incurables with all the morbid and depressing atmosphere which this term suggests. Conditions prevailing in these institutions were tempered and modified by the intelligence and vision of Dettweiler, Brehmer and other pioneers; but nevertheless they remained merely improved asylums for the hopelessly sick.

Recognition of the infectiousness of tuberculosis and the confirmation of that theory by Koch brought about radical changes in hospitals for consumptives, placing them on a more scientific foundation perhaps, but improving the condition of the patients very little if at all. From 1882 with the discovery of the tubercle bacillus, we witnessed the development of what may be described as the "pest house type" of sanatorium in which fear of contagion appears to have been the dominant factor in the guidance of architectural design, equipment and institutional management. Scattered throughout the United States today, there still remain specimens of institutions established when the tubercle bacillus was in the ascendancy,—cold, severe structures possessing little more possibility for creature comfort than the surgical operating room, the mausoleum or the morgue.

Thought Turned Wholly to Early Cases

Following demonstrations by Trudeau as to the curability of early or moderately advanced tuberculosis through various modifications of out-of-door life, there came about a vigorous movement for the establishment of institutions for "incipient cases" with a consequent neglect of the more advanced patients.

The impracticability and injustice of confining our institutions entirely to the treatment of early cases were soon demonstrated and the more progressive sanatoriums, earnestly seeking to serve their communities, adopted a broader policy and began receiving all classes of cases. This step was taken with the idea that the earlier cases could be arrested or cured; the more advanced

patients could be given comfortable asylum under conditions not too depressing until death relieved them; and, in the meantime the interests of the public health would be conserved by removing open and infectious cases from homes and communities.

For a time, with this broadened policy, many sanatoriums originally constructed for the open air treatment of early cases imposed unwarranted hardships upon the more acutely sick by housing them on open porches and exposing them to severe weather and other trying conditions. It became recognized after a time, however, that there must be provided distinct hospital facilities for the sick consumptive in which he could receive special medical and surgical attention and comfortable bedside care.

Within very recent years, and only within very recent years, has there come about a wholesome change in our attitude towards the advanced patient. The success of artificial pneumothorax and



The hospital department, known as "The Homestead," is located within the town and treats those with active and surgical tuberculosis.

of other bolder surgical procedures, when used discreetly, has suggested the opening of a great field of surgical or other active treatment of tuberculous disease with a correspondingly brighter outlook for the advanced patient, until our present standards require that every complete tuberculosis sanatorium, in addition to quarters for the open air treatment of earlier cases, must also have quarters for hospital patients and reasonable provisions for surgical work.

Mingling of Various Stages Objectionable

The reception of incipient, moderately advanced, advanced and surgical consumptives, particularly in the smaller institution, has led to an unfortunate mingling of patients which is distinctly objectionable. The objectionable feature of this

mingling of all classes of patients, however, does not lie so much in the possible depression of the less acutely sick by such incidents as occasional severe hemorrhage or even death among the sicker patients. These were the bugaboos of the sanatoriums of a decade or two ago. As a matter of fact, one of the most difficult things in the management of the early consumptive is to keep in his mind a wholesome respect for the seriousness of tuberculosis and a definite fear of the consequences of his indiscretions. The occurrence of a hemorrhage due to an unwise act or even an occasional death, if intelligently handled, will serve as an object lesson of distinct and definite value. Association with advanced cases, so long as the balance between early and active cases is intelligently maintained and the distribution of patients is wise, does not have the depressing effect upon the incipient patient with which it has been credited.

There are other considerations however of more genuine importance. The general methods and plans of handling acutely sick consumptives and the early tuberculous are as different as the provisions for treating two entirely different types of disease, and it is practically impossible to provide entirely satisfactory conditions for both classes in any one small sanatorium. The advanced or surgical consumptive should have the quiet and the general environment and conditions of a well conducted general hospital in which provisions for out-of-door life are of secondary importance. There should be very little coming and going and the amusements and diversions which are provided should be even-toned and in no way exciting. The psychology of the advanced consumptive, with its characteristic optimism, is conducive to this quiet and uneventful course of life.

The early tuberculous patient, on the other hand, requires entirely different surroundings. He should have a thoroughly cheerful and homelike atmosphere with freedom of movement when not contra-indicated by his physical condition. He should have ample amusements and diversions and such as are likely to be objectionable to the acutely sick. He may rejoice in the blare of a brass band and is not upset by the mechanical din of a player piano. He must not be depressed by the presence of the acutely sick any more than the acutely sick should be disturbed by the natural effervescence and activity of the convalescent. It is to be borne in mind that the stay in a tuberculosis sanatorium is one of months and years and not of weeks or days as in the general hospital.

Division of Two Classes of Patients

In view of these conditions and with the rapid development of chest surgery and the promise



In the outskirts of town is the open air colony, a sanatorium and school for the treatment of early tuberculosis.

which this holds out to very sick consumptives, it became obvious to me, after an experience of six years in the Springfield Open Air Colony, that there would be a distinct advantage in having a small, well regulated hospital for active and surgical cases and a sanatorium for early and convalescent cases, the two institutions to be located on entirely separate grounds, but under one medical, nursing and business administration, with records and personnel interchangeable as conditions might require.

The hospital department of the institution was then established and was located in the residence section of the city within ten blocks of the business center, conveniently within reach of the medical staff and convenient to the members of the patient's families at all hours of the day and night. In this institution a definite hospital atmosphere is maintained without the diversions and activities to which incipient patients are entitled, but which would prove distinctly disturbing to patients undergoing surgical treatments.

This hospital is employed for the reception of patients, for the study of doubtful cases, for the care of advanced bed-ridden patients, for the treatment of serious complications and for the employment of surgical procedures.

The sanatorium department for earlier and convalescent patients is situated in the outskirts of the town with grounds amply large for graduated exercise and for amusements under supervision. The atmosphere is that of a cheerful country home and not that of a hospital. There is little depression to avoid the disturbances of others and the patient is taught to live as nearly as possible under the conditions which will surround him on return to his own home. In addition, the colony is made rather than a medical institution a school of instruction in right living, in academic branches and in useful and entertaining arts and crafts.

Two years have passed since the plan was put in operation and we are now able to compare the benefits of actual practice with those of theory. On the whole, the venture has been successful

and with certain modifications suggests a solution for many of the problems which have developed in the rapidly changing policies of sanatorium management.

Practical Benefits of Plan

1. By complete separation of the institutions, the atmosphere and method of living may be entirely different and entirely appropriate to the two classes of patients.

2. One relatively small unit has the expensive construction and equipment of a general hospital, while the sanatorium unit has the simple and inexpensive construction and equipment suitable for convalescent patients.

3. The patient is "graduated" from the atmosphere of the hospital to the homelike conditions of the sanatorium before discharge to his own home, preparing him more intelligently for his future life.

4. The hospital, situated in the heart of the city, permits constant contact of the medical staff with the sicker patients, thereby guaranteeing infinitely better medical service. This downtown location also allows easy access for members of the patients' families day or night without the necessity of providing meals and quarters for these visitors within the institution.

5. Change from one institution to the other as the patient gradually improves gives relief from the monotony of the prolonged stay without the disrupting changes in methods and treatment usual in the change from one sanatorium to another.

To say that this plan, or any plan in the present undeveloped state of sanatorium design and operation, is not open to objections is of course absurd. While one general staff with medical director, attending physician, business manager, superintendent of nurses, accountant and clerical employes is able to care for both institutions, the servant and domestic problem is practically doubled. This has been somewhat compensated, however, by the fact that there are two complete domestic crews and nursing staffs. Domestic flare-ups, such as the walking out of groups of domestic servants, frequently so disturbing, have never occurred simultaneously in both institutions, making it possible to strengthen the crippled crew in one institution from the full crew in the other on an hour's notice. In one instance, when the entire kitchen crew in the sanatorium walked out immediately after luncheon, a full and fairly efficient crew was sent from the hospital in time to prepare a satisfactory dinner.

Increased overhead expense was, of course, to be expected even though the employes drawing the largest salaries serve the interests of both in-

stitutions. However the various advantages in service have more than compensated for increased costs and it has still remained possible, by careful business and administrative methods, to maintain exceedingly low rates and to make a safe margin of profit during shaky and uncertain times.

The most interesting obstacle to the complete carrying out of the original plan, and one which is not without its distinct value, lies in the patients themselves and their unwillingness to change from one institution to the other after having become comfortably and contently established. It had been anticipated that there might be some reluctance on the part of the patient in the sanatorium section to his being removed to the hospital section; but it had not been expected that the patients in the hospital section would object to removal to the sanatorium with its attractive rural environment and greater freedom of action. It was found however that there developed very early a friendly spirit of rivalry, not only among the patients but among the employes, a spirit incidentally which has gone far toward the elevation of the standards of service in both places.

With the steady development of the field of chest surgery in the treatment of pulmonary tuberculosis and with the more definite promise of recovery afforded the advanced patient, I am satisfied that this plan of organization will prove more and more attractive, particularly in the relatively small private institutions in which overhead cost and every other consideration can be made secondary to the character of professional service and the content and welfare of the patients.

DETROIT MAYOR DONATES MILLIONS TO CONSOLIDATED HOSPITALS


Amalgamation of the Michigan Hospital School for Crippled Children at Farmington and the Children's Free Hospital of Detroit, as proposed by Mayor James Couzens of Detroit some months ago when he agreed to donate from \$1,000,000 to \$5,000,000 to the institutions if brought under one head, has been completed. The hospital will be known as the Children's Hospital of Michigan. Mayor Couzens has been named president of the institution.

The Detroit chief executive agreed to donate \$1,000,000 immediately after the two institutions were merged, which sum he announced he would increase to \$5,000,000 as the institution required it. The hospital will be open free of charge to those children from all parts of the state whose parents cannot afford to pay. Those financially able will be compelled to pay for hospital service.

Tentative plans call for medical and surgical treatment at the Detroit hospital with the old hospital school as a convalescent home. The building at Farmington will be greatly enlarged to accommodate the expanded patronage.

The new hospital came officially into being on April 1.

Mrs. James Couzens became a member of the executive committee at the reorganization. The million dollar gift was made in the form of securities.



The
MODERN HOSPITAL

EDITORIAL AND PUBLICATION OFFICE
22-24 East Ontario Street, Chicago

EDITORS

Henry M. Hurd Fidelity Building, Baltimore
 Frederic A. Washburn . Mass. General Hospital, Boston
 Winford H. Smith . Johns Hopkins Hospital, Baltimore
 S. S. Goldwater . . . Mount Sinai Hospital, New York
 W. L. Babcock Grace Hospital, Detroit
 H. E. Webster Royal Victoria Hospital, Montreal
 R. G. Brodrick
 Alameda County Hospital, San Leandro, Cal.
 M. T. MacEachern
 Vancouver General Hospital, Vancouver, B. C.

MANAGING EDITOR
Joseph J. Weber . 22-24 East Ontario Street, Chicago

SUBSCRIPTION

Domestic postage, \$3.00. Canada, \$3.50. Foreign, \$4.00.
 Single copies, 35 cents. Annual Review Number, 50 cents.
 Domestic rates include United States, Cuba, Mexico, Porto Rico, Canal Zone, Hawaii and Philippines.

STIMULATING STATE ORGANIZATION

THAT the American Hospital Association in the twenty-three years of its existence has played an important role in the development of the hospital field of this country and Canada, no one would deny. Its annual conferences and expositions have been a source of inspiration and knowledge to many superintendents and other hospital executives and more recently its service bureaus have covered a wide range of practical service.

There are, however, types of service that a national association cannot be expected to render; indeed, is not equipped to render. This is evident from the position of influence and service state associations have won for themselves ever since the first one was organized in Ohio on August 25, 1915. During these seven years, eighteen state hospital associations have been organized. With the four New England states that are constituent parts of the New England Hospital Association but do not as yet support state hospital associations, these eighteen organizations represent states having 4,751 hospitals out of a total of 9,021 in the United States and its possessions. They already have to their credit a substantial body of achievement. Several of them are now geographical sections of the American Hospital

Association; others contemplate applying for membership.

Whether the organization of state hospital associations has now reached the point of saturation may be doubted. There are still twelve states with more than 100 hospitals each in which state hospital associations have not been organized. And yet three of the associations thus far organized are in states having less than eighty hospitals. A tendency, however, is manifesting itself to organize regional associations covering two or more states, all or some of which feel they lack the number of hospitals necessary to maintain an effective, vigorous state organization. The New England states, for example, although two already have state associations, have recently organized themselves into a regional association and applied for membership as a geographical section of the American Hospital Association. Three of the mid-western and several of the southern states are considering the advisability of organizing regional associations with constituent state bodies.

All this is excellent as far as it goes. But what of the remaining twenty-six states with their 4,270 hospitals? If the growth of state hospital associations is not solely a matter of imitation, if it holds the possibilities of genuine helpfulness, why should not the American Hospital Association be more aggressive in stimulating the organization of state associations in every state where such an organization is justifiable. And where the number of hospitals is not sufficiently large to warrant a state association, would it not be well for the officers of the national organization to hold informal conferences with the local hospital people when legislative or other problems make them advisable in order to carry its influence and helpfulness in an intimate and personal way to the very periphery of its field?

UNDERTAKING SERVICE ASSURED

WE ENTERTAIN no marked animosity toward undertakers. They perform a regrettable, though necessary, function in the body politic and on the whole they perform this function in an honorable and dignified manner. Occasionally, however, we run across a member of this time-honored guild who mixes a bit of politics in with his business of disposing of the dead, much to the discomfort, to put it mildly, of the living.

The particular undertaker we have in mind has hit upon a unique method of stimulating his business and incidentally increasing his profits. Having had himself elected a member of the city

council, he paid his respects to the president of the city board of health appointed by his honor, the mayor; complained that he was not getting enough business from the City Hospital, which is administered by the board of health; and asked the president of the board if he would not kindly see that a number of his business cards were scattered about the wards of the hospital in order to let the relatives and friends of patients know that he would be glad—at the appropriate time to be sure—to serve them. The president of the board, always ready to meet the wishes of one of the city fathers in any way he could consistent with his high moral obligations as guardian of the city's health, forthwith betook himself to the hospital with a hundred cards. Would the superintendent of nurses please see that these cards were distributed in the wards? Having the interests of the patients solely at heart and not knowing or wanting to know one undertaker from another, the superintendent courageously refused to distribute the cards, and presently handed in her resignation.

But the cards were distributed; it was the wish of the city father. And the relatives and friends of the hospital's patients have had the comfort—a service few hospitals are progressive and alive enough to render—of definite knowledge that there is an undertaker in the city who, should the need arise, will be glad to serve them.

Then, too, these cards are a source of reassurance to any patients who may have the good fortune to have them brought to their attention!

SOME GUIDING PRINCIPLES IN HOSPITAL STANDARDIZATION

TO BE successful any great movement must be controlled and guided by well-grounded, basic principles; otherwise it is bound to miscarry and result in the loss of much time, effort and money. In his address at the annual Congress on Medical education, Licensure, Public Health and Hospitals, held in Chicago in March, Dr. John G. Bowman, chancellor of the University of Pittsburgh, enumerated some of the fundamental principles that must guide the hospital standardization movement, whether that movement has to do with improving medical and surgical practice in the hospital, bettering administrative procedure or simplifying equipment. These principles are drawn from Dr. Bowman's rich experience in the standardization movement of the American College of Surgeons, and should be used in the formulation of any further program of hospital standardization that may be embarked upon by the American Hospital Association or any kindred

organization. Here are the principles in Dr. Bowman's own words: (1) The aim of hospital standardization must lie within the purposes which the hospitals have consciously set for themselves. (2) The program must be flexible, permitting free action and free play of intelligence, the guide being not a set of rules but a mark of future attainment. (3) The program must require responsibility and accountability on the part of each individual privileged to take part in the program.

For the elucidation of these principles our readers are referred to Dr. Bowman's address which appears on page 418 of this issue. They will not of course jump at the conclusion that these are the only principles that may conceivably control the hospital betterment movement. Indeed, Dr. Bowman would probably be the first to admit that they are not. It is conceivable that if the movement should undertake the betterment of administrative control or the simplification of hospital equipment and structural materials, an additional set of principles would have to be called into play as a result of a broader analysis not merely of the medical and surgical service of the hospital but of the hospital as a whole and its relation to the community.

CHARACTER IN A MAGAZINE

THERE is more to a magazine than merely text matter, advertising pages and cover.

Character is of tremendous importance especially in a magazine published for a professional field in which ideals of service are deep rooted. A magazine can have and should have a soundly developed character. Its editors and publishers should have a high sense of public responsibility.

This character is commonly termed prestige. It is a plant of slow growth. It requires many years of constructive thought, of service freely given to the field, of definite accomplishments, to develop prestige or character for a magazine, and hence properly this factor is the principal asset of a publishing business. Character or prestige, as you please, is reflected through the advertising policies quite as definitely as in the leading editorials, if one but looks beneath the surface.

From the first issue *THE MODERN HOSPITAL* has exercised in the interests of the reader a close supervision of its advertising pages so that the entire hospital field might look to it with full confidence as a guide to approved equipment, supplies and services.

The importance of this function of a magazine applied to the hospital field is of far-reaching significance because in the diagnosis, treatment

and care of the sick, ignorance of new equipment or of new methods which might aid the patient is an acknowledgement of inefficiency.

ELIMINATING NOISE

WHILE in the construction of the hospital of today a great deal of thought is given to the physical comfort of patients, little or none is given to their mental comfort and welfare. We build hospitals that are sanitary, aseptic, and properly lighted, heated and ventilated, and we make them fireproof and durable. In doing so we use steel, concrete, tile and hard plaster, and the result is noise, confusion and nervous excitement. Hospital authorities should give more thought than they have given hitherto to the elimination, or at least the minimizing, of noise in their institutions. It is clearly a serious handicap to quick recovery from illness. So far as practicable automatic door stops should be used; strips of felt will kill the metallic impact of elevator doors; small lobbies at elevator entrances will keep the noise emanating from the elevator shaft from penetrating through the hospital. Sound reverberations within the institution can be eliminated by the application of a sanitary acoustic felt to the upper wall surfaces of rooms and corridors. Sounds transmitted through the structural members of a building may be greatly reduced and often eliminated by proper construction. In this connection our readers are urged to study Professor F. R. Watson's article in the March issue on "Sound Proofing in Buildings with Applications to Hospital Construction." Mr. Richard Resler's article in the April issue on "Confining the Noise of the Hospital to its Source" and the article by Mr. Laurence C. Hart in this issue on "Problems of Noise in Hospitals and How to Meet Them."

In so far as noise is due to the personnel of the hospital, its elimination can probably best be achieved through some such expedient as that adopted by Mr. Chapman at Mount Sinai Hospital, Cleveland, in the organization of the society for the prevention of unnecessary noise, through which the hearty cooperation of the entire lay and medical staff has been secured in banishing avoidable noise from the institution.

THE SIMPLIFICATION OF BUILDING MATERIALS

UPON the very heels of our March building and equipment issue in which one or two articles made a plea for simplification of building material and equipment came an announcement from the Chamber of Commerce of

the United States of a recent conference between officials of the department of commerce and representatives of architectural, engineering and building organizations on the simplification of building materials as a means of eliminating waste in industry.

For some time past the United States Department of Commerce, under the leadership of Mr. Hoover, has interested itself in this movement and there is reason to feel assured that something worth while will result from its efforts. We mention this conference here because in the results of this effort to simplify building material the hospitals no less than industry will share, and perhaps relatively to a greater degree. For the desire to use the new and unusual, simply because it is new and unusual, has often been yielded to in hospital construction. This has often been the special temptation of architects who, called upon for the first time to build a hospital, strive after something different, quite indifferent to whether or not it will serve the purpose for which it is intended. If the multiplicity of types and the great variety of dimensions that now prevail in many items of construction can be very considerably reduced, the cost of construction will thereby be lessened. This will mean the greater production at less expense of many of the items that go into the construction of hospitals. Hospital associations, both national and state, will wish to give this movement their moral support and practical cooperation in so far as it bears on the hospital field.

OFFERS MEDICAL FELLOWSHIPS

Fellowships in medicine have recently been established by the National Research Council for the purpose of increasing the supply of thoroughly qualified teachers in medicine in both clinical and laboratory subjects in their curative and preventive aspects.

The fellowships are supported by appropriations of the Rockefeller Foundation and the General Education Board amounting in total to \$100,000 a year for a period of five years. Those receiving awards will be known as Fellows in Medicine of the National Research Council.

To qualify for appointment as a fellow, a candidate must have the degree of doctor of medicine or doctor of philosophy from an approved university, or preparation equivalent to that represented by one of the degrees.

Since the principal purpose of establishing these fellowships is to increase the number of competent teachers in the field of medicine, each incumbent will be required to gain experience in teaching. As creative work is regarded as essential to the best teaching, emphasis will also be placed upon research.

Fellows will be at liberty to choose the institutions or universities in which they will work, as well as the men under whose direction they will carry on their researches, subject to the approval of the fellowship board.

Correspondence concerning the fellowships should be addressed to the Division of Medical Sciences, National Research Council, Washington, D. C.

HOSPITAL RATES AND THE PATIENT'S POCKETBOOK

"WITHIN the limited sphere of medical relief, philanthropic hospitals of this country, as they are administered, seem to be practicing a sort of limited communism, applying the principle 'from each according to his ability; to each, according to his need.' Why is it that two hospitals in the same community, dealing with apparently the same clientele, differ so widely in their ward collections?"

Believing that the question of hospital earnings from this angle has interests both economic and social, THE MODERN HOSPITAL passed the above query on to representatives of three groups of workers for their reactions.

Methods various hospitals use in fixing rates and in determining the ability of patients to pay all or part of these rates were sought in communications addressed to a selected number of (1) sociologists who, it was thought, might discuss the subject from the standpoint of social policy; (2) hospital administrators; and (3) hospital social workers who have had personal contact with patients and who consequently could speak from the standpoint of the individual patient.

From the social theorists come the following suggestions of F. Stuart Chapin, Ph. D., director of the Smith College Training School for Social Work at Northampton, Mass.

Dr. Chapin declares that eighty-eight per cent of persons gainfully employed in this country are unable to contribute their share of hospital costs by reason of their low incomes. The present hospital situation, in regard to earnings, he declares, is a natural result of fundamental economic conditions and the remedy lies ultimately in directing social policy to achieve: (1) a lowered birth rate; (2) increased productivity of capital and labor; and (3) a simpler (not a lower) standard of living for all classes.

Dr. Chapin's comments are as follows:

"Hospital earnings have an important bearing on social policy. Although it is the physician and the hospital executive who in the last analysis must work out the details of the problem, the social scientist is in a position to point out some fundamental considerations.

"As a general principle the cost of hospital service should be offset by rates charged patients, if the hospital is in the long run to avoid becoming a pauperizing agency which undermines the self-respect of its patrons. In practice, however, this principle is not easy to approximate.

88 Per Cent Unable to Share Hospital Costs

"Recently some significant facts of income distribution in the United States have for the first time become available. The National Bureau of Economic Research has just published the results of a comprehensive scientific study of income in the United States, and finds that in 1918, 88 per cent of persons gainfully employed received incomes of less than \$2,000 yearly; that the average per capita income in 1918 was \$595; and that with allowance for inflation, the average per capita real income in 1918 was only \$376. This means that the normal family of five, two parents and three children, had in 1918 a real income of \$1,180 a year.

"Compare this figure with the careful estimate made by the United States Bureau of Labor Statistics for the family of five at the 'rock bottom' minimum of \$2,025.56 for 1919.

"Is it not evident from these statistics that most of the

88 per cent who have less than \$2,000 a year will be unable to contribute their share of hospital costs? Although the United States is the richest nation in the world we must yet look to 12 per cent of our population to contribute more than their due per capita share of hospital support.

"In spite of these facts, an economic social policy would seem to indicate the desirability of having charges for hospital services show some relation to costs. Hence for each hospital separately it is important to work out per capita costs of service in both short and long term surgical cases, and in both short and long term medical cases. The resulting figures would have significance because hospital incomes are derived from (1) endowments, (2) public subsidies, (3) gifts, and (4) pay patients (in part or in full); and the comparatively small amount of income derived from (4) is offset by that derived from the other sources. This situation is the logical result of the general facts of income mentioned above which are not perhaps widely known.

Hospital Has Role in Social Progress

"As a member of the intellectual proletariat, it is worth while mentioning in passing a condition of affairs in which adequate hospital services for the rich are supplied because paid for, and hospital services for the poor are supplied free, but in which it is increasingly difficult for middle class people to meet the expenses of adequate hospital services. It is becoming increasingly evident that social work, as distinct from relief work or charity work, needs to be extended to include the middle and upper classes. If this condition is recognized by hospital executives, I believe that an extension of hospital social service will supply an important auxiliary means of securing the facts to guide the fixing of rates and the determination of patients' ability to pay.

"From the facts above considered it is evident that the present hospital situation is a natural result of fundamental economic conditions which affect in varying degrees all social agencies. I do not believe that the situation is permanent, but I do consider that present conditions will prevail for a long time to come. What are the remedies?

"It seems to me that the answer lies ultimately in guiding social policy to achieve, (1) a lowered birth rate, (2) increased productivity of labor and capital, and (3) a simpler (not a lower) standard of living for all classes. The modern hospital should play an important rôle in bringing about these desirable results.

"Finally, I am one of those who believe that some form of state-regulated contributory health insurance would help to ease the present situation, since the burden to the hospital of a relatively large number of no pay or small pay patients would be materially lightened by distributing the risks through insurance."

Insurance, according to Dr. Stuart A. Queen, director of the Simmons College School of Social Work in Boston, is the remedy for the present hospital rate problem. His views in part are expressed in the following letter:

"I have never made a special study of hospital earnings or methods of fixing rates, but as a student of social economic problems and formerly as secretary of a state board of charities, I have given some attention to these problems.

"I have been interested in the sliding scale of charges

adopted by some hospitals, but am of the opinion that they are not very practical. Wherever there is the possibility of different charges for a definite service, someone—either the admitting officer or a social worker—must necessarily play the part of detective in order to determine the economic status of the patient. I think that this is undesirable from every point of view.

"Personally I do not believe this problem of hospital rates can ever be satisfactorily solved except on a basis which involves some form of insurance. This might be local, state or national; it might be mutual, joint-stock or state; but in any case a scheme of health insurance would, properly worked out, not only guarantee the necessary income, but would also eliminate the very troublesome problems involved in discrimination between patients of different economic levels."

Routine at Vancouver General

Practical suggestions in rate fixing are contained in the following account from the administrator's point of view supplied by Dr. M. T. MacEachern, general superintendent of the Vancouver General Hospital, Vancouver, B. C.:

"Hospital schedule of charges, to be fair and business-like, can only be computed intelligently on a cost accounting system. This means fairly extensive detail. In our institution we have computed, as far as we are able, the cost of the various services with 15 to 20 per cent added.

"The ability of patients to pay is determined in various ways:

(a) Initial investigation: Patient on admission gives to the admitting officers all the information possible about his financial status, unless he is too sick, then it is secured from friends or later from the patient in the ward when able to give it. Our admitting office is in charge of nurses well trained in this work, who have no trouble in securing this information in practically all cases. Therefore, generally speaking, on admission we get considerable data as to the patient's ability to pay. All private and semi-private patients are asked to pay a week in advance and as they remain in the institution are supposed to keep this paid up.

(b) Investigation of out-patients: All patients attending the out-patient department come with investigations made by different organizations sending them in. This is done on a form which the hospital supplies. This investigation is checked over by the social service nurse, who manages the out-patient department. Usually the investigators follow a certain basis of say, an allowance of \$5.00 per member of the family, that is, in a family of four children with father and mother the weekly allowance would be \$30.00 and the monthly allowance \$120.00. If the patient is receiving more than \$120.00 per month he is able to pay for his treatment; if less than that he is eligible for free treatment. Of course you can quite see that this rule cannot always stand; each case, to a certain extent, must be considered on its own merit.

(c) Investigation after admission to the hospital: This is done through special investigation machinery re patients inside and outside the institution. Inside the information is secured by a diplomatic investigator by personal contact with the patient or with the relatives. Certain information may be secured by telephone from the employer or other sources. Outside investigation is made through a specially delegated officer who checks up all information at the time of admission and probably by personal visit to the abode of the patient. This man goes around on a motorcycle and can cover considerable distance each day. The investigation department, therefore, uses every possible method, personal contact with the

patient, relatives or friends, communication with the employer or with the doctor, personal visit to the patient's home. All information gathered is collected and compiled in a permanent record in the business office.

(d) Use of various organizations: In our work here we secure valuable information from many public health and welfare organizations, as for instance: school, medical and nursing service, Soldiers' Civil Re-Establishment, Workmen's Compensation Board, Relief Department, Police Department, churches, clubs and all manner of such organizations. We have an organization in Vancouver known as the Greater Vancouver Public Health and Welfare Association, which embraces all organizations doing health and welfare work. Through such sources valuable information can be secured. We expect shortly to open up a confidential exchange bureau of information in the city, and I feel sure that such would help us a great deal in our investigation of patients' finances here. However, I find that our own investigators are the best; they get the information more quickly, more accurately and with the least possible disturbance to patients and relatives. It is desirable in all cases as far as possible, to get all the information possible without bothering the patient at all. This can be accomplished in many cases."

Finds Few Cases of Misrepresentation

Procedure at the Johns Hopkins Hospital of which Dr. Winford H. Smith is director is outlined by his executive assistant, in charge of the admitting office, Miss Emma E. Carter.

"In our experience," says Dr. Smith, "we are convinced that comparatively few patients get into the hospital as free cases as the result of misrepresentation. On the other hand, however, many patients do get into the hospital with a promise to pay, whom we later have to transfer to the free list, or whom we are obliged to carry on a charge account, which not infrequently turns out to be a bad account. As a rule we do not place accounts for public ward patients in the hands of a collector. Occasionally when we are very sure of our ground we do this unhesitatingly.

"Private patients we have very little difficulty with. They are expected to keep paid a week in advance. If they do not or if we have any reason at the time of admission to doubt their ability to pay, they are obliged to give us references with whom we can communicate as to their financial responsibility."

Miss Carter's statement which follows deals solely with ward patients:

Place of Residence is Guide

"In the admitting office where the ability of the patients to pay full or part of the hospital rates is determined, we first consider the locality or that part of town in which the patient lives. This is a very good guide to us in the handling of cases, as we can usually judge something of the financial status of patients by knowing the neighborhood in which they live. We depend not only on the cooperation of the patients themselves, but of the family as well to obtain the desired results. All free beds are reserved for city and state cases, but even so each patient in turn is questioned regarding finances. When once the confidence of the patient is gained, with a few exceptions they will be frank and will discuss without hesitancy their business and their financial affairs in minute detail, stating the amount each working member of the family is making, the length of time they have had work or been without work, the likelihood of losing or procuring a position, and, what is even more important,

home expenses or financial problems. After this has been accomplished, and the various points made clear and sufficiently straightened out, we can then decide, or help to decide, the amount the patient is capable of paying, whether full rate, part pay or free.

"If we find a patient has financial support suited to his needs and we feel he is objecting to the business arrangement unnecessarily, we require him to pay the full rate if he desires to enter as a patient in this hospital.

"For out-of-state cases the method pursued is simpler, owing to the fact that it is understood that as a rule they can be admitted only if they can pay the full rate."

System at New Haven Hospital

At the New Haven Hospital, New Haven, Conn., Dr. Harold W. Hersey, superintendent, has in operation the following system of determining the ability of patients to pay:

"We have certain fixed rates which at the present time consist of the charge of \$17.50 a week for accommodation in the wards. This includes medical and surgical attendance together with medicine, (except special formulae and serums) nursing and laundry. This charge is the same in all departments of the hospital.

"A few free beds are available for patients unable to pay anything. Such patients may be sent in through the nominators to these beds, or patients not sent in in this way who seem unable to pay any of the ward rate are referred to the social service department for investigation. Social workers look into home conditions and a report is made on a slip recommending that the patient be placed on a free bed. These are approved by the superintendent who specifies what free bed or fund is available for the use of this patient and the per capita cost is charged to the fund.

"Patients who have no ready money at the time of admission but have prospects of some time being able to pay their hospital bill are admitted at the regular ward rate with the understanding that payment is to be deferred until such time as they are able to meet the expense. Very often such patients pay \$5.00 or \$10.00 per week or even less, until their hospital bill is paid.

"With the present lack of employment, we have had to admit many cases who are not, strictly speaking, eligible for free beds but who at the present time are out of work and unable to meet expenses. These pay what they can while they are in the hospital and the balance in small amounts such as \$5.00 a week or even as little as \$5.00 per month until the bill is paid.

"In the main office we have a collector who, if former patients do not appear on the definite date set in their agreement, goes to their homes to collect or to find out the reason why they cannot meet their payments.

"Some of the charity patients, of course, are eligible for city aid and they are referred to the board of charities at City Hall by the dispensary. If they are eligible for city care, they are sent into the hospital at the rate of \$10.00 per week, which is all that the city pays.

"Outside towns pay the regular ward rate of \$17.50."

Social Worker is Judge

"At Mount Sinai Hospital in Cleveland," writes Frank E. Chapman, director, "we primarily divide our patients into three classifications: pay, part-pay and free. We then divide our beds into five classifications: private rooms with bath, private rooms without bath, semi-private rooms (which are two and four-bed rooms), pay beds and free beds in the ward.

"Our private room rate is predicated absolutely upon

the patient day cost of the institution, plus a reasonable degree of profit, and every occupant of a private room is expected to pay the prevailing rate of that room. We make no class allowances, i. e., to the medical profession, social workers or nurses. We do, however, in specific instances make an allowance for these classes of individuals, where their financial condition indicates.

"Semi-private rooms are a little lower than actual cost. These rooms are located in the private pavilion and have all of the facilities of private rooms with the exception of a single bed in a room. Into this group of beds, we place those patients who are not strictly ward cases but who cannot afford the expense of a private room. May I add in passing that to me this is the one big service that any hospital can render.

"All admissions to our wards are made through the social service department, and the rate is based entirely upon the judgment of the head of that department. To illustrate specifically, our ward rate is \$3.00 per day. I venture the statement that not over 25 per cent of our pay ward admissions pay \$3.00, the rate varying all the way from \$3.00 to 50 cents a day. Our free beds of course are made available to those people whom we feel cannot pay anything."

BRITISH COLUMBIA MEMORIAL HOSPITAL UNDER CONSTRUCTION

Provincial Royal Jubilee Hospital, a memorial to the soldiers of British Columbia who fell in the World War, is being erected at Victoria. P. Leonard James and K. B. Spurgin of Victoria are the architects. The east wing is the first unit to be erected.

The east wing comprises the public ward building, 128 feet by 50 feet, and the private ward building, 155 feet by 45 feet, and provides altogether for 140 beds on four floors. Of these thirty-four are for maternity cases, the entire third floor being devoted to this purpose with two delivery rooms, nurseries, day rooms, etc.

The operating department occupies the fifth floor and is most complete and modern in every respect. Six operating rooms are arranged along the north side of the building, each pair of rooms having a surgeons' scrubroom in connection. Special facilities are provided for eye, ear, nose and throat, also dental cases. A large sterilizing room, sink room, nurses' workroom, surgeons' common room and lavatory are arranged on the opposite side of the reception lobbies.

In the northern portion of the ground floor are well arranged chemical and pathological laboratories, autopsy room and commodious lecture rooms.

The entrance is at the ground level and opens directly into a hall from which the two large elevators connect to the ward floors above. A patients' receiving room is provided on this floor.

The building will be steam heated on the Dunham system. A gravity exhaust system of ventilation is to be installed, the open window together with a special type of direct-indirect radiation being relied on as being more effective and manageable throughout the hospital generally than the expensive mechanical systems of forced ventilation so prevalent some years ago, and more suitable to local climatic conditions.

Mechanical ventilation will, however, be employed for the operating rooms, where conditions will not permit fresh air being brought direct from the outside.

Give me health and a day and I will make the pomp of emperors ridiculous.—Emerson.

EFFICIENCY IN HOSPITAL ADMINISTRATION*

BY FRANK E. CHAPMAN, DIRECTOR, MOUNT SINAI HOSPITAL, CLEVELAND, OHIO.

IN A discussion of the theories and principles of hospital operation, we should first visualize what a hospital is. The first hospitals were for the insane, and the development of hospitals in those early centuries was practically at a standstill so far as concerned their function. With the introduction of the laws of antiseptics and asepsis and with a better understanding of the theory of anesthesia came the gradual development of the surgical hospital. After a period of time, with the progress of the science of medicine and the realization of the need for that intensive correlation of various medical specialties in order to get the proper diagnosis, there developed the need for a hospital offering facilities other than surgical.

A hospital to function properly must be the health center of the community it serves. It must furnish every known means for the scientific diagnosis and care of patients. Just in so far as it does furnish each of these needs, so far is it going to succeed. With the development of hospitals with this principle uppermost in their scheme of operation, we shall see a more intensive and extensive hospitalization of the sick than ever before. Many conditions lead one to this prediction: the demands of the clinician which cannot be met, our present-day shortage of both medical men and nurses, our present-day method of living—these are among the most important factors that will produce this greater hospitalization. If this prediction is sound in the main, is it not up to you and me to see to it that our hospitals fulfill the obligations assumed when they took unto themselves the names of hospitals.

We have heard innumerable comments that hospitals are inefficient and those of us who have been privileged to know the hospital field generally rather than locally will admit that there is not the degree of efficiency in hospitals that exists in industry. In this paper I will attempt to outline what to me is fundamental in organization from the board of trustees down.

Members of boards of trustees are in the main selected because of their individual successful performances,—they are pre-eminent in their respective places—but the sad commentary is that when on administrative bodies of philanthropies, they forget the principles that made them successful in their individual walks of life. It must be realized that the fundamental principles of operating a steel mill are identical with the fundamentals of operating a hospital. Therefore the schemes of organization that have produced efficiency in industry are applicable to hospitals.

The board of trustees of any organization is the policy-forming body, interested in the great perspective of the

Hospitals in the main are admittedly organized on an exceptionally loose basis, and as a consequence inefficiencies of management and operation are bound to creep in. A plea for trustees who function and for administrative heads who are qualified to administer is the text of this paper. The application of principles, procedures and practices that have proved efficient in industry and are equally applicable to hospitals is advocated. The adoption of restrictive measures that produce so-called red tape is, of course, to be deplored, but the administration of the affairs of so complex an operation as that of a hospital must have certain restrictive measures that are adhered to. It must be realized that the fundamental principles of operating a steel mill are identical with the fundamentals of operating a hospital. Therefore schemes of organization that have produced efficiency in industry are also applicable to hospitals.

whole problem, in the formation of policies both administrative and financial, and in the selection of someone delegated with the power to carry out the principles outlined by them. There is a pernicious practice in a large majority of our hospitals of committees of the board acting in other than an advisory capacity. The trouble with most of our boards of trustees is that they are trying to run everything, instead of having a superintendent capable of administering the affairs of the institution.

In a large number of instances the superintendent has no control over the organization he or she serves; small wonder that hospitals are not run efficiently. I can show you organizations in which the superintendent does not presume to give instructions to his various department heads without previous consultation with the board of trustees, for the very reason that if he did, and the department head disagreed with the instructions, the department chief would go to some member of the board, and the next day the order would be rescinded. How long would such a policy last in industry?

Size of Board

The size of the hospital board is immaterial, but first of all let's get an active board. Let's get a board that is composed of men from every possible walk of life, so that we may bring into its deliberations a composite knowledge of as many divergent points of view as possible. Let's get an individual who can bring the school point of view, the financial point of view, the merchandising point of view, ad infinitum, so that the policy-forming body will bring into its deliberations a broad view of all of the complex problems of community activity.

An ideal board is of approximately eighteen members. In my opinion there should be definite standing committees, approximately five in number. Mount Sinai Hospital in Cleveland has a board of eighteen members, with an executive committee, a medical staff committee, a building and grounds committee, a purchase and standards committee, a finance and audit committee, an out-patient and social service committee and a training school committee. These committees are made up, with the exception of the executive committee, of the chairman and two members. An attendance of two is expected at all committee meetings, and these committees meet regularly in the performance of their work.

The executive committee is comprised of a chairman of each one of the standing committees with the president of the board of trustees as chairman. The secretary and treasurer of the board are also ex officio members of this committee.

No committee of the board of trustees may give instructions to the administrative officer. The executive com-

*An abstract of an address before the Taylor Society, Philadelphia, January 23, 1922.

mittee has authority to give instructions in an emergency, but such instructions must be confirmed by the board of trustees at its next meeting. All instructions, except of course in emergencies, must come through regular channels to the board and by it be transmitted to the administrative officer.

Qualifications of a Superintendent

To my mind the superintendent should be responsible to the board of trustees for the entire activity of the institution. He should be the medium of expression of the board to the various personnel, and in turn he should be the medium of expression of the personnel to the board.

I should like to define just a few of the requisites, as I see them, of a proper administrative officer. He must have a financial sense. He must have a buying sense, with a knowledge of practically every commodity that enters into our economic life. He must have a mechanical sense. He must have a professional point of view; be able to recognize the problems of the various professional groups. He must have a social point of view. He must have a technical knowledge of a very great many intricate procedures, not necessarily an intimate knowledge of them, but a general knowledge. And last, but not least, I believe he must have a very large portion of the milk of human kindness, for I don't believe that a hospital can be properly administered on any other than a personal basis.

When you get a composite of these qualities, you have an individual that in any other walk of life could demand a great deal more in material returns than the average hospital position pays, and may I right here offer a plea that all of you board members read the report compiled by the editor of *THE MODERN HOSPITAL* and study the range of hospital salaries that are paid; after you have read it, stop and think about it a little.

You ask me what is the matter with hospitals, and my unqualified answer to you is that you cannot get efficiency for the salary that the average hospital pays its superintendent, and until such time as our boards of trustees realize the importance of efficiency in the administrative positions of their hospitals, and accept the principle that we should get the maximum of efficiency out of one of the fundamental functions of our every-day life, just so long will it take us to get efficient hospitals.

Outline of Departments

Following is an outline, as I see it, of the operation of a hospital divided into various departments. These departments are not listed in order of their relative importance, but only for purposes of control:

Administrative	Medical staff attending
Housekeeping	Medical staff resident
Laundry	Laboratories
Mechanical	X-ray
Purchase and issuance	Special therapies
Dietary	Social service
Nursing	Out-patient

These departments are roughly divided into physical and professional groups, but please do not forget that their activities are so closely interrelated that there is practically no line of demarcation. Do not forget further that the contact of the administrative officer with each of these departments is administrative only, and that the minute he presumes to either dictate or control the activities of the professional group, he assumes unto himself a prerogative that is unsound. His job is to secure an absolute correlation and cohesion of activities.

The financial policy of most of our institutions is really

a joke. To use the slang expression "it just ain't." Money is a necessary evil. We must have it, and in order to make it work for us to the best possible advantage, it must be conserved, and therefore every hospital, no matter how small should apply the budget system of financial operation, and stick to it through thick and thin. I am not particularly interested in how my dietitian gets results. I am only interested that she lives within her budget. I am assuming that by virtue of her training she is more qualified to say whether she shall serve aquab or corned beef and cabbage.

General Administrative Groups

Administration of a hospital is divided into the following general groups:

- Superintendent's office.
- Accounting general.
- Accounting patients.
- Admitting and registrar.
- Telephone and information.
- Records and analysis.

The superintendent's office must be the pulse of the institution. In it one should be able to tell what is going on all over the place, and the superintendent can do this by sitting at his desk. I believe he should get around the institution and get a feel of it, but I don't believe that he should go around so much that he will lose a perspective of the whole. One of the greatest mistakes that most of our administrative officers make is that they tie themselves down with so much detail that they have no chance to see the big things. If the superintendent is tied down with detail he cannot get that big perspective of community service, which after all is the real job of a hospital superintendent. Most of our administrative officers are performing duties that could better be performed by a much lower priced member of the personnel.

There can be produced a system of morning reports that at a glance will reflect the condition of the entire institution to the superintendent. That morning report can be prepared in from five to fifteen minutes, and it should only be necessary for him to give it a glance. It is just as much the right of the administrative officer to have this on his desk every morning, as it is for the head nurse to have a report of the conditions of the house patients on her desk.

If a hospital is large enough to warrant assistants, please, superintendents, don't make the mistake of letting them run wild; allocate definite duties to them, and let them alone. Load your responsibilities on to them, and make them responsible for results. Turn them loose, and let their success be a test of your ability to administer. I have found through experience that if you set up an elaborate set of rules of administration, thirty days after they are set up a large percentage of them are dead letters. Make your rules and regulations active. Make your system so flexible that obsolete rules can be discarded without affecting the live ones.

I am not going to attempt to outline the details of an accounting system, but merely to state the various pertinent requirements. First, there should be a set of books that will permit of a complete recording of every financial transaction of the institution; second, a chart of accounts that will permit of a proper allocation of all charges and payments to proper expense accounts; third, a proper budget system as previously outlined; fourth, a daily report to the superintendent; fifth, machinery for a monthly report to the board; and, sixth, a control of daily earnings and collections.

The patients' accounting system should be predicated

upon the following: first, a system of special charges for special procedures; second, a ward census which answers the dual purpose of originating charge to patients and furnishing the information for vital purposes; third, a report of admissions and discharges; fifth, the preparation of bills and collection of accounts. Such a system should permit of the daily control of your patients' accounts. In this way the balance at the end of the month is struck automatically with the last day's work.

The admitting service consists of the following requisites: the patients' register; the clothes list; the valuable list; the mechanism for sending information immediately to the proper source of information; and facilities for the reservation of rooms. The details of such a service, of course, must be worked out in the individual hospitals.

Telephone and Information

There is one service in the institution that I should like to dwell on at a little length, and that is telephone and information service. To my mind the telephone is the nerve center of the institution, and it must be so efficient as to furnish quick and efficient means of communicating not only from the outside world with the hospital, but between departments in the hospital.

We have adopted a policy in the institution I serve, on our main telephone trick, of employing no one who has not had instruction by the telephone company in voice control. The telephone, as I see it, is the gateway of the hospital, and it makes a large difference in the opinion of the outside world if you have the right kind of a voice on the telephone.

It may be desirable at times to combine the telephone and information center. In my opinion, it is logical. Others disagree with me. I believe that inasmuch as the telephone switchboard is the recipient either directly or indirectly of all information of the hospital that it is very logical to set up the information center at that point. In any event, wherever you set up such a center, make it all inclusive.

May I describe to you the information service that we have adopted at Mount Sinai Hospital, Cleveland. I don't say it is perfect. I am merely giving it as a suggestion. We have a cabinet with twelve drawers for visible index, in which are arranged the following: an alphabetical record of patients by location; a census showing the board of patients on each ward; a reservation for obstetrical rooms. All information of the institution, telephone calls, etc., are referred to information. All the patients in the institution are flagged with colored tabs on one, two, three and four conditions. Concerning all patients that are in conditions one or two, the information is given out without contact with the ward. Of conditions three and four, on the danger list, information is instructed that under no conditions is information to be given out except after contact with the ward. In addition, we have placed in our main lobby an information or hostess desk, take care of personal visitors to the institution. This installation was one of the finest things from the standpoint of policy that we have ever done. The interesting thing about this installation is that for the first two months after it was inaugurated the individual in charge was barely kept busy. Since that time we are constantly having to rearrange her work by reason of the increased number of activities that have been developed.

Records are divided into three groups; professional, financial and vital. The professional group is the patient's history and all of the various procedures that enter into it. A busy practitioner of medicine cannot be expected to make a complete record of his patient's performance, un-

less he is provided with a mechanism that will make this recording easy. Financial records form the second group. The trouble with most administrators is that they look upon the recording of the financial performance of their hospital in a sort of humdrum way, with no special interest in it. To make a study of figures is as much or more romantic than reading a book of fiction. If these figures are studied intelligently they will reflect much of human interest. It is necessary that there be available quickly for any given period a statement of that period's performance. The analysis of accounts six months late will be of no value.

Vital statistics should include an analysis of all of the various activities of departments. If your nursing cost jumps twelve cents in one month, find out why. If you have a large number of complaints on one ward, why is it? If you will go around with an eternal question mark on your lips, which question marks emanate from the reports that you have intelligently studied, you will be surprised how quickly a large part of the troubles that you may have will be ironed out.

Mechanical Department

Probably one of the largest items of expense in hospital operation is the heat, light and power, and maintenance and repair expenses, and yet I venture the statement that it is one of the most sadly neglected departments in the hospital, simply because the average administrator does not know anything about his mechanical department, and because the administrative board has not seen the wisdom of employing efficient supplemental mechanical supervision. Keep a check on the number of tons of coal you use, on the amount of water you use, on the mean average temperature of a given month, compare it with last month, and see how you come out. Find out how many tons of ice you pull, what it is in terms of percentage, and see that you are buying the kind of coal that you ought to have. Keep a record of the repairs on your wards, how they compare as between ward and ward, what the nature of these reports are.

Purchase and Issuance

There are three problems in this general head: first, purchase; second, storage; third, internal requisition.

Requisitions for purchases are two-fold—one from the storeroom, and the other from department heads for special equipment. Machinery should be set up so that absolutely no purchase of any type will be made without the definite approval of the administrative officer and without the knowledge that these purchases will not exceed the budget for the account to which it is to be charged. No purchases, no matter how small, should be made on any other than a competitive basis, and bids should be obtained.

All orders given should be confirmed in writing, this confirmation to be specific in detail of commodity, price, terms and delivery. I think it is desirable that this confirmation be made in triplicate—one copy to the vendor, one copy to be used to follow up the purchase, and another copy for the storeroom.

All receipts of commodities should be on a written form, in order to complete the transaction, and to make the bill ready for payment. Every voucher that is passed for payment should contain the following: a copy of the purchase order with the approved request for purchase; a receipt slip indicating receipt of goods; a bill from the vendor properly o. k'd as to receipt, price and extension. All of these should be filed with the voucher.

As to the problem of storage and recording, in my

opinion all hospital supplies should be carried on an inventory card or sheet. This inventory should show the date received, the firm name from whom purchased, the commodity, the price, the amount of the commodity, the amount of money represented, and to whom distributed. The store's inventory should be carried on a chart of accounts similar to the financial accounts. The expense item of a given period should be predicated upon the monthly inventory adjustment; this inventory to be taken on the adding machine from the inventory sheet, except on bi-yearly periods when the physical inventory should be taken. In other words, the inventory figure for a given account, as of the first of any month, plus the receiving for that month, minus the inventory for the last date of that month, should equal the expense for that account for that month. In addition to the stores inventory there should, I think, be an equipment inventory of the institution.

The internal requisition system is one of the bugaboos that most of our administrators fear, and in my opinion too much stress cannot be put on this system. Efficient buying may save ten to fifteen per cent. Efficient issuance of supplies can save untold per cent. I should like established, first of all, the fundamental principle that the consumer at no time should control. In other words, that the dietitian should never have control of anything else but her daily needs of foodstuffs. All requisitions should be approved by the superintendent or a properly delegated assistant superintendent, and at no time by the department head. There should be established a definitely set supply day, not exceeding once a week, with the possible exception of the main kitchen, which may have daily supplies. There should be a definite system of breakage exchange, and broken commodities replaced only on an exchange basis. In other words, a broken thermometer should only be replaced when the broken parts are brought to the storeroom. The value of this broken commodity may be nil, but the moral effect will produce results.

Dietary Department Should be Primary

The problems of the dietary department are two-fold, the feeding of patients, the feeding of personnel. There is a variation in control in various hospitals, but in any event the department should be considered a primary department and report made by the head of the department direct to the administrative officer and not through any other channels. The old-time practice of having a dietitian under the principal of the school of nurses is fundamentally incorrect. The submittal of routine menus for given periods cannot help but produce not only economy but efficiency.

Nursing Problem is Difficult

In the nursing department there are two problems, that of nursing patients and that of training student nurses. Today one of the biggest difficulties of hospital administration is the lack of understanding between nurses and the administration of hospitals, and it will take a mighty levelheaded piece of thinking to avoid bringing about a chaotic condition. The attitude on the part of some of our nurses that "the hospital is a bridge upon which the superintendent of the hospital and the principal of the school of nurses may meet to discuss problems of nursing education" (and I am quoting literally the words of one of the members of the nursing profession), is so very far distant from the ideals and ideas that I have of hospital service that I think it is bound to cause a lot of trouble.

Most of us have seen the pernicious effect of one man controlling a hospital, and it is just such a condition that I should like to fight. To set up a system for the formulation of the proper administrative control, we have established at Mount Sinai Hospital a medical council, consisting of the director of the hospital, the director of surgery, the director of medicine and the director of one of the specialties, and to them is referred all matters dealing with medical policies. No medico-administrative policies are issued by any one of the constituent members of the medical council, but they are transmitted by the director of the hospital, as orders from the medical council. Very important is the development of monthly meetings of the various services. This cannot help but be productive of great good.

X-ray Laboratory and Special Therapies

In the next division I am going to include x-ray laboratories and special therapies. These facilities are a definite part of the hospital service, developed as an aid to the clinical staff in the diagnosis and treatment of diseases, and can in no sense of the word be considered as primary services. They are merely supplementary to the clinical staff. It is my sincere hope that the day will soon come when they will be included in the cost of room service, just the same as the nursing and dietary cost.

The development of medical and hospital social service is probably the newest development in the hospital field. Very few of our institutions have in any sense realized the potentiality for good of such a service. There are untold advantages and avenues of service. I will just mention the two which any organization can start with: the follow-up of interesting cases, and the affording of material relief and the assuaging of the anguished minds of some patients in the hospital in regard to the condition of those upon whom they are dependent. We have found a very great field for this latter type of work in our own institution.

If the hospital is to be the health center of the community it serves, and if by this example it is to assist in the formulation of better medical practice, then the biggest avenue of service that it has is the operation of an efficient out-patient department. By very nature of the work that it does, an out-patient department reaches many times the number of people that the hospital proper reaches, and reaches them in a way that can be of great therapeutic value.

After having drawn the comparison as between industry and hospitals, I should like to crystallize this simile—both of them have a board of trustees, the policy-forming financial group; both of them have a general manager, one may be called president, the other the superintendent; both of them have department heads, in one group he may be called production manager, sales manager, ad infinitum, in the other he is called principal of the school of nurses, dietitian, ad infinitum; both of them should have, if they have not, laboratories for research and checking; both of them, if they are to be efficient, must have regular channels of disseminating information and instruction, to the end that the top may know what the bottom does and that the bottom may understand the problems of the top. In only this way can we get that efficiency that is so desirable. You may say that I am building up for you a mountain of red tape. I answer you by saying that when it becomes red tape, it becomes inefficient. But so long as it is virile, so long as it produces results, the procedures that have been outlined will produce the more efficient plant.


RECRUITING NURSES BY ADVERTISING

How recruits for its nurses' training school were obtained by Mercy Hospital, Peoria, Ill., through newspaper advertising, is told in a recent issue of *Printers' Ink*.

In common with many small hospitals, this Peoria institution found its service handicapped by an insufficient number of student nurses. Whereas the graduating classes numbered ten or twenty, the probationers would number only from two to six.

One member of the board of trustees had unbounded faith in advertising and he obtained an appropriation that would tell the story of the hospital's need in the local newspapers. The advertising campaign was placed in the hands of an agency which prepared six advertisements stressing the rewards that come to the registered nurse when her training period has been completed.

Emphasis was placed in each advertisement of the series on the professional and monetary aspects of nursing since



"Florence Nightingale, R. N."

The same thrill that a man feels when he is first privileged to place "Ph.D.", "LL.D.", "M.D." or "D.D.S." after his name, comes to the young woman who has completed the course of training at a recognized training school for nurses and is authorized to put "R. N." after her name to signify that she is a "Registered Nurse" and qualified to go into any home or hospital and nurse back to health and strength the patients whom she is to serve. As a follower in the footsteps of a woman who will be revered for all time, Florence Nightingale, every Registered Nurse has a right to feel as proud of her ability and skill as has the doctor with whom she will work most of the time.

"R. N." means something more than "Stenographer" or "Typist" or "Secretary." "R. N." is not something to be obtained in three or six months. It takes three years of study and practical application of the things you learn before you can write "R. N." after your name—but just ask any "R. N." you meet if it isn't worth it!

"R. N." Costs More—And it Pays More!

Like everything else worth while, it takes effort. But the rewards are so vastly greater than those of mediocre employment that Registered Nurses are in all truth, in a class by themselves.

A profession that will support you independently—or an education that will help you to be a better woman, a better wife and a finer mother. Do you want it?

A class in our training school will start soon. Come and talk it over with us.

THE MERCY HOSPITAL
Franklin and Perry Sts. Peoria, Illinois
MARY A. HOUGHTON, Supt.

One of the six advertisements in a local newspaper which moved 100 young women to inquire about the nurses' training school.

it was an established fact that the chief cause of the student nurse shortage was the good wages being paid girls and women by factories and industries requiring no preliminary training course. The accompanying cut shows the character of the ads. The worth of nurses' training to a wife and mother was not overlooked in the campaign.

As a result of the ads more than 100 girls called, telephoned or wrote to the hospital for further information. The advertising had purposely omitted any list of qualifications and so a number of those making inquiries did not possess the proper prerequisites. But from the suitable applicants the training school readily obtained its full quota. So moved was one young woman by the advertisement that when she learned she could not meet the qualifications she enrolled in a night school to round out her education.

There is no better ballast for keeping the mind steady on its keel, and saving it from all risk of crankiness, than business.—Lowell.

RAG DOLL HOLDS FIRST PLACE

Walking dolls, talking dolls and dolls with real hair have failed to supplant the old-fashioned rag dolls in the affection of children, a toy popularity contest among the children of St. Mark's Hospital in New York has disclosed. The raggier the better, the hospital authorities have found, and so deep in some instances does the child's attachment for the doll become that the toy must be beside him before he will go to sleep.

E. F. Lohr, superintendent of the hospital, who has been studying the reaction of children to toys, believing thoroughly in their "toxic" value, expresses himself as convinced beyond question that the old rag doll had an appeal that is equaled by no other toy.

"Our children's ward here has always been of particular interest to me," Mr. Lohr declares. "Ever since I noticed how toys would take a child's mind off its illness and really aid in convalescence, I have been watching carefully which toys held the most popular appeal for the little ones. I have made test after test, using all kinds of articles, from the cheapest to the most expensive. In nine cases out of ten the little old rag doll goes to the child's arms, while all the other toys are spurned.

"Of course now I am speaking for the little girls, although the rag doll stands high also in the affections of the boys, especially those under four."

LOOKING UP TO THE MOVIES

Hospital days will not be so tedious for patients in the hospitals of Los Angeles, Cal. when they can see the latest motion picture releases projected on the ceiling above their beds. Marshall Neilan, the producer, has announced that he will install a DeVry projection machine, such as the one Wesley Barry is operating here, in every hospital in that city.



Two patients at California Hospital, Los Angeles, are following the adventures of "Freckles" Barry in "Penrod."

A GLIMPSE AT THE PAY CHECK OF THE HOSPITAL SOCIAL WORKER

BY J. J. WEBER, MANAGING EDITOR, THE MODERN HOSPITAL, CHICAGO

FOR centuries women of broad sympathies and a love for humankind have served the unfortunate in the name of sweet charity. They asked no reward other than gratitude and they received only that. Although their efforts were ever generous, their methods were frequently unscientific and they often developed greater dependence among the dependent, thus adding to indigence and pauperism.

In recent years social service has taken on a scientific and professional aspect. Social problems have been analyzed and the resultant principles applied. The social worker of today possesses no less love of humanity or enthusiasm for righting social wrongs than her sister of the nineteenth and previous centuries, but she has an understanding of sociological factors, she is working for permanent rather than temporary relief, she is a small unit in a large organization which presumably is not duplicating the efforts of another, and she is working not only for the improvement of the individual but of the social order.

But because the work in this new and larger aspect is no less an outlet for unselfish enthusiasm, is appealing to those with the urge for serving their fellowman and is fruitful of both immediate and ultimate satisfaction, the world has scarcely made financial rewards for the work commensurate with the energy, skill and training expended in it. The satisfaction the social worker gets from her service must in a measure compensate her for a lesser wage.

No Recognition of Special Training

The medical social worker is not an exception. In the fifteen or sixteen years of her connection with the hospital she has become indispensable to it. Few large hospitals are without her, and with the growing realization of the value of follow-up work her need is bound to extend. A salary survey indicates that her financial reward is on a par with that of other social workers but that hospitals have not always given recognition through the pay envelope of the special knowledge she must possess in addition to her general training.

Simultaneously with an investigation of salaries of hospital executives, THE MODERN HOSPITAL collected during 1921 data concerning the stipends of medical social workers. On these data, gathered by the questionnaire method, are based the conclusions drawn in this article. Questionnaires soliciting information on the salaries paid directors of social service, the estimated monetary value of living costs furnished by the hospital, and the date and amount of their last wage increase were dispatched to 785 hospitals in the United States and Canada. The response to these queries was by no means unanimous but was proportionate to the careful distribution of inquiries and so undoubtedly is of some scientific value.

In the first instance, questionnaires were sent to 500 hospitals of less than 100 beds, selected from various states of the republic in relative proportion to their population as based on the 1910 federal census. Responses were received from 112 of these institutions. Secondly, a list of 285 non-Catholic hospitals of the United States and Canada of more than 100 beds, based on the Amer-

ican College of Surgeon's 1920 list of approved hospitals was compiled and identical information was sought from them. One hundred and sixteen answers came to this appeal for information. So the succeeding figures are based upon the replies of 22 per cent of the smaller hospitals questioned and 40 per cent of the larger institutions. Hospitals represented in the survey vary in size from 20 to 2,700 beds.

Average Yearly Wage Is \$1,528

Before considering the comparative salaries of hospital directors of social service, it might be interesting to know just how widespread the position has become in institutions for the sick. Among hospitals of less than 100 beds, the survey shows that 10½ per cent have social workers. When the 100 to 200 bed group is reached it is found that 46 per cent of the institutions have medical social workers; in the 200 to 299 bed group, 70 per cent; in the 300-499 bed group, 84 per cent. Ninety-four per cent of the hospitals of 500 and more beds, represented in this survey, have one or more social service workers. These percentages, correct last summer, are probably considerably larger today. The position is being created rapidly in institutions all over the country. Notations on many replies indicated that the social worker had been only recently added to the staff or that such an addition was being contemplated.

Considering all the hospitals represented, regardless of size, the average yearly wage for medical social workers in the United States and Canada is \$1,528. Into such an average went few extraordinarily high salaries and none of the nominal wages paid by religious institutions for deaconess service, etc.

This is more correctly a pure salary average than can be secured for a hospital executive or dietitian. In a consideration of such positions comes the factor of living expenses which is difficult of estimate. The hospital social worker, in the main, gets little or nothing outside her salary. In many institutions her luncheons are furnished her; in some, all of her meals; in others, nothing.

Outside agencies frequently furnish social workers to the hospital, paying part or all of their expenses. Salaries in such instances seem to be on the same scale as when met by the hospital.

Salaries Range from \$720 to \$2,800

The highest salary paid a director of social service in any of the six classifications herein listed is \$2,800, this in a hospital of 117 beds. The \$2,800 is an increase of \$300 over her salary in 1920 and includes no maintenance.

Low level is \$720, a not infrequent wage, as a study of the succeeding tabulations will indicate. It will be noticed that more salaries fall below the \$1,528 average than rise above it. The great majority of all annual stipends seem to fall between the \$1,200 and \$1,600 mark.

One metropolitan institution with three social service workers pays them \$1,708 each. They may take luncheon at the hospital if they desire. This hospital has the largest social service staff of any of the institutions listed.

From the viewpoint of financial returns, the hospital dietitian with an average yearly salary of about \$1,200

is considerably better off than the director of social service. Dietitians receive, in most cases, full maintenance, which they variously estimate at between \$500 and \$1,800. The minimum training of the hospital dietitian probably exceeds the requirements for hospital social service, although very frequently the medical social worker has had a liberal education, specific training in social science and some nursing or medical studies. Such academic training coupled with practical work in the field makes a long apprenticeship for the hospital social worker.

For such complete training, the salaries of hospital social workers seem ridiculously low. Whether the hospital has to satisfy itself in many cases with persons of less preparation or whether it is fortunate enough to obtain socially inspired persons who find added compensation in the joy of their work are questions which cannot be answered from the findings of this survey. Either is probably true.

Statistical information on which the preceding generalizations are based may be found in the following tabulation:

INFORMATION REGARDING SALARIES PAID DIRECTORS OF SOCIAL SERVICE IN HOSPITALS

Classification I—Less than 100 Beds

Range of Bed Capacity of 112 Hospitals—20 to 97 Beds

1 to 49 Bed Group

No director of social service.

50 to 99 Bed Group

Eleven hospitals, or almost 10 per cent, of 112 hospitals under consideration.

Average salary director of social service.....	\$1,363
Maximum salary	1,800
Minimum salary	720
Salaries above average.....	6
Salaries below average.....	5

Classification II—100 Beds or more

Range of Bed Capacity—100 to 2,700 Beds

100 to 199 Bed Group

Twenty-five hospitals, or approximately 21½ per cent, of 116 hospitals under consideration.

Average salary director of social service.....	\$1,460
Maximum salary	2,800
Minimum salary	500
Salaries above average.....	11
Salaries below average.....	14

200 to 299 Bed Group

Twenty-three hospitals, or more than 19 per cent, of 116 hospitals under consideration.

Average salary director of social service.....	\$1,610
Maximum salary	2,700
Minimum salary	900
Salaries above average.....	10
Salaries below average.....	13

300 to 399 Bed Group

Five hospitals, or 4 per cent, of 111 hospitals under consideration.

Average salary director of social service.....	\$1,386
Maximum salary	1,800
Minimum salary	900
Salaries above average.....	3
Salaries below average.....	2

400 to 499 Bed Group

Eleven hospitals, or 9 per cent, of 116 hospitals under consideration.

Average salary director of social service.....	\$1,881
Maximum salary	2,500
Minimum salary	1,200
Salaries above average.....	4
Salaries below average.....	7

500 and More Bed Group

Fourteen hospitals, or 12 per cent, of 116 hospitals under consideration.

Average salary director of social service.....	\$1,489
Maximum salary	2,500
Minimum salary	720
Salaries above average.....	7
Salaries below average.....	7

SALARIES OF DIRECTORS OF SOCIAL SERVICE IN HOSPITALS HAVING LESS THAN 100 BEDS

No. of Beds	Monetary Salary	Monetary Equivalent	No. of Beds	Monetary Salary	Monetary Equivalent
50	\$1,800	\$800	75	\$1,500	\$780
56	1,020	480	75	960	360
57	1,200	....	80	1,200	....
60	1,800	480	87	1,800	....
72	1,500	400	90	1,500	480
75	720	Dinners			

SALARIES OF DIRECTORS OF SOCIAL SERVICE IN HOSPITALS HAVING 100 OR MORE BEDS

No. of Beds	Monetary Salary	Monetary Equivalent	No. of Beds	Monetary Salary	Monetary Equivalent
100 to 199 Bed Group					
100	\$1,200	\$720	150	\$1,200	\$900
115	1,800	....	150	1,800	Meals if desired
150	1,800	....	150	1,000	1 room
250	1,200	600	150	1,200	....
100	1,200	1,000	150	1,600-1,800	....
117	1,800	....	150	1,800	360
119	1,200	....	150	1,800	One meal
125	1,029.60	....	155	1,800	250
125	500	....	160	1,200	....
125	1,500	480	170	960	480
135	1,200	....	175	Deaconess	550
137	1,800	Expenses	180	1,020	B., R. and L.
140	1,500	1,000	180	1,483	....
142	1,380	....	185	1,200	300
145	1,200	480	192	1,800	....
200 to 299 Bed Group					
200	\$1,500	....	250	\$2,100	Lunch only
200	1,537	....	255	2,400	....
200	1,500	\$365	250	1,800	....
200	1,200	480	250	1,500	\$600
200	900	600	256	2,000	....
200	900	....	267	1,800	400
210	1,708	Lunch only	273	900	600
215	1,200	600	275	1,380	....
225	1,500	Lunches	289	2,700	....
236	1,920	Food	291	1,800	2 meals
240	1,440	B. and R.	295	1,860	Meals only
250	1,500	Laund. of unif.			
300 to 399 Bed Group					
300	\$1,800	....	360	\$1,380	\$720
320	1,800	Lunch	360	960	400
400 to 499 Bed Group					
400	\$ 900	....	471	\$1,000	....
404	1,800	\$250	475	1,800	....
446	2,500	....	480	1,200	\$500
450	1,800	180	480	1,200	500
450	2,400	324	485	2,400	Lunch only
450	1,200	....	494	1,800	800
450	1,800	....		
500 and More Bed Group					
500	\$1,800	\$1,800	1100	\$1,708	....
500	1,500	....	1209	1,708	Lunch only
625	1,800	....	1550	2,000	\$720
700	720	600	1600	1,400	1,200
770	1,380	....	1837	1,739	....
850	1,200	150	1900	1,500	150
900	1,200	120	2700	1,200	500

A PARAGRAPH IN COMMENT

By IDA M. CANNON, President, American Association of Hospital Social Workers, New York.

Mr. Weber's interesting presentation of the much discussed question of compensation for hospital social workers is timely. Aside from its obvious helpfulness in answering questions that are constantly being asked concerning the present practice, it suggests the necessity of our getting some basis for fair and sound determination of adequate salaries for the service rendered. Most of us who care for proper salaries for hospital social workers care more for standards of service in this field. I would suggest therefore that salary questions be determined in each instance by comparison with salaries in other professional departments of the hospital and a correct estimate of the difference between monetary return to the executive nurse who has maintenance allowance and that to the social worker who properly lives outside. This estimate of maintenance cost should be made on actual cost of living in the community and the cost per person in the institution, which is obviously less. But most important of all seems to me the obligation on the hospital to demand in return for adequate salaries to hospital social workers the personal qualifications and proper professional equipment for this specialized field.

THE FUNCTIONS AND MANAGEMENT OF A SMALL HOSPITAL LABORATORY*

By FREDERICK R. TAYLOR, B.S., M.D., PHYSICIAN AND CLINICAL PATHOLOGIST, GUILFORD GENERAL HOSPITAL, HIGH POINT, N. C.

A FEW years ago in many sections of the country clinical laboratory work was looked upon askance as an innovation of somewhat doubtful value. The new clinical pathologist in a town found himself in a position somewhat similar to that of the first man in town who had the temerity to purchase an automobile; in other words, he had to face skepticism and even ridicule until he proved the value of his work. Sometimes, being human, he fell down in his diagnoses or his results for some reason failed to tally with the clinical features of some case, and then the conservative ones would wag their heads and get about as much satisfaction out of his discomfiture as they formerly did when the horseless carriage broke down and the old mule had to pull it back to the barn. Now conditions have changed. In some sections there is actually danger of overrating the laboratory and ignoring its natural limitations.

In discussing this subject, it might be well to start out by noting a few things that are *not* the functions of the hospital laboratory.

To begin with the laboratory is not for the purpose of relieving any physician of careful clinical study of his patients, the taking of thorough histories, complete physical examinations, etc. These things are absolutely indispensable in constructing clinical pictures.

Second, the laboratory is not an imposing collection of apparatus the chief purpose of which is to overawe the lay mind with the erudition of its technicians and the scientific resources of the institution of which it is a part.

Third, the laboratory is not a mere compliance with the letter of the requirements for hospitals laid down by this association, valuable and necessary as those requirements are. Nothing that is permanently worth while can have as its chief function the "getting by" of some fixed standard. If, however, the laboratory fulfills the *spirit* of the above-mentioned requirements as well as the letter, it will indeed realize its highest functions.

Fourth, the laboratory's chief purpose is not to furnish some clinical pathologist with an income.

Essential Functions of Laboratory

The laboratory is a workshop with certain definite services to perform,—services to both the patients and their physicians. From the very start, it has four essential functions: first, to give what aid it can in the solving of diagnostic problems confronting the physician; second, to detect by certain routine procedures entirely unsuspected pathological conditions; third, to help in the prognosis of many cases, including the estimation of operative risk; and fourth, to aid in following the course of many conditions and in throwing light on the effects of operations or other procedures attended with any risk to the patients. Later, as the laboratory develops and broadens out, it can be of signal service in performing its fifth function, that of original investigation and research.

Certain routine laboratory procedures seem essential as a minimum in practically all cases. In enumerating these, I take the liberty of quoting from my instructions regarding laboratory specimens used in our hospital. The

details, of course, can be varied by different hospitals.

1. All patients entering the hospital and staying overnight shall have a routine specimen of urine sent to laboratory the next morning with the following exceptions: a. When the condition of the patient is such that catheterization is necessary to secure a suitable specimen, such specimen shall be sent only on the order of the doctor in charge of the patient to catheterize. b. Patients admitted on Saturday shall have routine specimens sent to laboratory Monday morning instead of Sunday.

2. Routine specimens of urine shall also be sent from every patient the morning after taking a general anesthetic, with the exceptions noted above.

3. All specimens of urine will be put in sediment glasses and placed on the laboratory with a slip under each glass containing the name of the patient from whom the specimen has been taken. The laboratory report sheet of each patient, with patient's name, date, and case number, will be placed on chart board in laboratory when specimen is sent. Routine specimens of urine will be collected by the night nurse and placed in laboratory not later than 7:30 a. m. Other specimens will be examined only by special request of the doctor in charge of the patient.

4. Specimens of urine sent to be examined before operation shall have their slips marked in addition, "Before operation at....." by Dr., giving the hour of the operation and the name of the surgeon.

5. Only emergency laboratory work will be done on Sundays.

6. All laboratory work other than routine urinalyses will be done only on request of the physician in charge of the patient for whom the work is to be done. Such work, when practicable, will be done in the morning.

7. The clinical pathologist will be notified as soon as possible of all emergency laboratory work.

8. No laboratory apparatus is to be used by the nurses except under the direction of the clinical pathologist.

Laboratory Procedures Employed

Of course a very large number of cases will require much more extensive laboratory study than a simple urinalysis. White cell and differential counts are indispensable in a great variety of conditions. Here let me add that in borderline cases I consider the differential count of more value than the white cell count for the following reasons: (1) It is more delicate than the white cell count in demonstrating pyogenic conditions; (2) it shows things which the white cell count cannot show, e.g., eosinophilia, myelocytosis, etc., besides demonstrating the red cells and showing the changes occurring in them. Where quick emergency action is desired, as in an obvious case of appendicitis admitted at night and the only question is whether operation can be deferred until morning or not, a simple white cell count may be enough, if it shows a high leukocytosis. In repeated studies of the blood to detect an increasing or decreasing reaction to infection, a simple white cell count is usually sufficient, but in ordinary cases the differential count should be made.

In all cases where an anemia of doubtful origin can be suspected, a red cell count and hemoglobin estimation should be made. I would condemn the practice of making a red cell count alone. It is no more valuable than a hemoglobin estimation alone, provided a good hemoglobinometer is used, and takes far more time. Both are necessary to decide between a pernicious and secondary anemia. In cases of anemia due to an obvious cause, such as gross hemorrhage, where quick action is desired, a hemoglobin estimation with a good instrument is enough.

It is not my purpose, however, to go into a general discussion of the indications for all the various laboratory procedures.

Scope of a Small Laboratory

The next question to be considered is the scope of the work of a small laboratory. This should include all work of real value than can be done by the laboratory workers

*Read before the annual meeting of the North Carolina Hospital Association at High Point on January 31.

and that the finances of the laboratory will permit. A few things carefully, conscientiously, and well done are far better than a great number of things poorly done. The laboratory should of course broaden its scope as rapidly as it can do so without sacrificing the quality of the work done. At present our scope is limited. We are doing routine urinalyses, quantitative sugar estimations, routine blood counts and smears, comparisons of bloods for transfusion, coagulation time, sputum examinations, stool examinations, spinal fluid examinations and cell counts, smears from various exudates and discharges, gastric analyses, and phenolsulphonephthalein functional kidney tests. We intend to take up a variety of colorimetric work in the near future, especially blood sugar estimations. As I stated before we are still in our infancy, but we believe we are growing in a healthy manner. Frozen sections, dark field work, typing of pneumococci, blood cultures, the preparation of autogenous vaccines, etc., are all things we are looking forward to doing, but we do not wish to take them up until we can really use them as they should be used. We are entirely satisfied with the state laboratory for our Wassermanns, and consider it poor policy for a small institution to try to do its own.

To be of the highest service to the hospital, the laboratory must be in close cooperation with all the other lines of medical work done in the institution. This absolutely demands, we believe, that a physician be in charge of it. Technicians are valuable assistants, but often peculiar situations arise that can be solved only by a consultation between clinician and laboratory man, the combined knowledge of both being essential. Often the doctor gets a laboratory report and he wants to know its significance. Here is where the limitations of the non-medical technician become evident. Good interpretation of findings is as necessary as good technic, for the hospital laboratory must serve the entire staff, and not only those trained in laboratory interpretation. Furthermore, often good interpretation will discover some error in technic and lead to a repetition of the test to the benefit of all concerned. With competent interpretation the laboratory can serve any and all of the physicians in a community.

To conclude, there are really five prime essentials in the work of the hospital laboratory:

1. Absolute ironclad honesty.
2. Clean reliable apparatus and good reagents.
3. Good technic.
4. Conscientious devotion to the work and ambition to continually improve both the quality and scope of that work.
5. Cheerful cooperation with all the other departments of the hospital.

THE HOSPITAL'S PLACE IN ELEVATING MEDICAL STANDARDS

Education of the practitioner through hospitals and clinics is the surest way of elevating the standards of the medical profession, says Henry C. Wright, director of the Hospital and Institutional Bureau of Consultation, New York, in an article in a recent issue of the *Long Island Medical Journal*.

The hospital's influence and a systematic effort of medical organizations to raise and maintain standards make for slow progress, he declares, but they constitute the most feasible method.

"Maintenance of the recognized standards of medical procedure in hospitals is one of the real problems," says

Mr. Wright. "How can the medical service be so organized and operated that the recognized standard will be maintained? Personally I have no great faith in a medical organization that rotates from period to period without some responsible head. Even though there be a medical organization in a hospital that has both good intentions and moral courage to reveal and attack a fault, yet such a medical organization is unlikely to have time or clerical assistance to ascertain what is actually taking place in the hospital.

"From the standpoint of a layman, it seems to me that every effort should be made not only to raise but actually to maintain the standards in hospitals where it is possible to do so through the form of organization and control; then through some organized effort of the medical profession to attempt to educate the field practitioner to adopt and maintain the standards set in hospitals.

"Personally I am strongly in favor of a medical organization for a hospital which has one or a few responsible chiefs in charge of services. Under such an organization, fewer men are on the medical staff. Thus fewer field men have an opportunity for hospital practice. Such a system markedly improves the character of service in a hospital. At the same time it restricts the opportunities of service of many practitioners. How can this handicap be overcome and the higher standard of practice developed in the hospital be transmitted to the field practitioner? This problem has not been satisfactorily worked out, and it is one of marked importance. The standards of hospital practice should not only be maintained but should be heightened, and I do not believe this can be done except that the hospital be served with a comparatively small, well supervised staff. On the other hand it is equally important that the field practitioner should in some way have transmitted to him the knowledge that is gained by the attendings in the hospital. The hospital standards and methods and practices should become his. I see no other way of bringing this about than that it be done through the cooperation of medical men.

"This one thing seems fairly obvious to the layman, that physicians and surgeons do not materially differ in motive and moral fiber from the average layman. There is no particular reason why they should be expected to follow routine rules and regulations any more closely than does a layman. In almost all walks of life, rules and regulations, to be obeyed, must be enforced by some form of punishment. I do not believe that standards created and defined by the medical profession will gain as rapid acceptance as they should unless there be some way of punishing those who do not accept or use these standards. From my experience with members of hospital staffs, I am fully convinced that this is true as applied to hospitals. A certain proportion of the members connected with hospitals needs little or no stimulus to maintain high standards. Others, however, need the constant stimulus of reminders, suggestions, interviews, threats with the possibility of dismissal."

There was once a man, a poet. He went wandering through the streets of the city and he met a disciple. "Come out with me," said the poet, "for a walk in the sand dunes." And they went. But ere they had progressed many stages, said the disciple, "There is nothing here but sand." "To what did I invite you?" asked the poet. "To walk in the sand dunes." "Then do not complain," said the poet. "Yet, even so, your words are untrue. There is heaven above. Do you not see it? The fault is not heaven's. Nor the sand's.—Maarten Maartens.

HOSPITAL FINANCE IN THE PROVINCES*

By C. J. YORATH, CITY COMMISSIONER, EDMONTON, ALBERTA, CANADA

"The common problem—yours, mine, everyone's,
Is not to fancy what were fair in life,
Provided it could be—but finding first
What may be, then find how to make it fair
Up to our means—a very different thing!"

IN DEALING with the subject of hospital finance it is very necessary that a proper and true perspective be drawn of the whole problem of health, how it should be maintained at the highest standard of efficiency and how, when it is run down, it can be restored. To consider only the cost of restoring health and to ignore necessary expenditures upon the maintenance of a high standard of health are not the best ways to arrive at an economical method in maintaining and operating hospitals. If we are to reduce this cost to within our means then we must, in addition, adopt methods which will produce a healthy people and reduce the required hospital accommodation to a minimum.

There is no question that public health is purchasable but should its degree of efficiency be controlled by a situation which demands rigid economy and retrenchment?

The standard of public health should not be lowered by parsimonious methods for after all "the wealth of life is health." But economy or efficiency cannot be obtained by a recognition of the foolish idea, held by some, that money required for hospital accommodation and school education must be provided no matter how wastefully it may be expended.

Today finance is anything but unlimited and we must again, like the Israelites, make bricks without straw.

*Read at the third annual joint convention of the Alberta Hospital Association and Alberta Registered Nurses' Association, Nov. 8-11, 1921.

If a business has to meet an ever increasing expenditure due to defects in its organization, plant or machinery, it is soon found, in order to obtain the best results and to reduce the wasteful expenditure of money, that out of date and defective methods must not only be reorganized and machinery replaced but they must also be maintained at the highest standard of efficiency. The same precautions which have to be taken to keep the mechanical machine highly efficient and to reduce to a minimum the cost of repairs are equally necessary in regard to the human machine, and if we are to advance the prosperity of the province and of this country, then the health of the people must be the first consideration.

Before dealing with the problem of financing our hospitals, the information and particulars incorporated in the table at the bottom of this page, are submitted showing the present cost of maintaining hospital institutions in some of our western cities:

Of the above institutions the hospitals in the city of Saskatoon appear to be in the soundest financial position and the deficit after making due allowance for bad debts is very much less in proportion to population than any of the cities quoted. This is probably explained by its low cost of operation per patient per day. It would appear, therefore, that good business management has something to do with placing our hospitals on a sound financial basis.

The grants paid by some of the provincial governments towards the maintenance of hospitals in their respective provinces during the years 1916 to 1920 as listed in the first table on page 450.

STATISTICAL INFORMATION ON SOME WESTERN CANADIAN HOSPITALS.

Description	Vancouver	Winnipeg	Saskatoon	Regina	Edmonton	Halifax
Population	125,000	192,571	30,000	40,000	60,000	60,000
Hospital	General	General	General and Isolation	General	Royal Alexander	Hospital owned by Prov. Govt.
Accommodation	1,200 beds	.....	150 beds	225 beds	147 beds	170 beds
Total Revenue (1920).....	\$919,652.38	\$605,385	\$128,435	\$247,759	.....	.....
Total expenditures, including fixed charges.....	\$1,033,249	\$719,534	\$137,091	\$290,087	\$265,640	\$180,064
Deficit	\$153,397	\$114,169	\$3,656	\$39,360	\$136,916	.....
Provision for bad debts (1920).....	.....	3% of earnings	\$10,000	\$31,751	\$32,497	.....
Total reserve for bad debts.....	.....	.....	.....	\$199,464	.....	.....
Total bad debts on books.....	\$150,000	\$20,000	\$9,986	\$211,678	.....	.....
Cost per patient per day.....	\$3.12 (Excluding fixed charges)	\$3.54	\$3.06 (Including fixed charges)	\$3.53 (Including fixed charges)	\$5.06 (Including fixed charges)	\$3.42
Revenue per patient per day.....	\$2.78	\$2.98	\$2.87	\$2.89	\$4.44 (Ex. F.C. \$4.16)	.....
Contribution by Provincial Government (1920)....	\$159,840 45c per patient	\$18,149 50c per day	\$22,390 50c per patient per day	\$347.46 50c per patient per day	\$26,178	.....
Patients during 1920 from points outside city.....	3,187	5,514	.....	1,925	1,010	1,175
Percentage of patients from outside city to whole.	25%	43%	53%	40%	33.5%	56%
.	City of Vancouver allows 60c per patient per day. \$161,-698, 1920.	.....	.....	.....	.....	.....
Hospital can charge for patients from outside municipality	\$2.50 per day	\$1.75 per day	\$2.50 per day	\$2.50 per day	.....	.....
The cost per patient in Edmonton, including fixed charges, increased from \$3.70 in 1919 to \$5.06 in 1920.	.....	.....	.....	.....	.....	.....

Year	Saskatchewan	British Columbia	Alberta
1916	\$ 132,000	\$ 262,629	\$ 92,085
1917	184,142	330,635	88,109
1918	222,989	352,603	97,793
1919	231,358	493,358	105,813
1920	252,889	459,544	185,724
Total	\$1,023,378	\$1,898,769	\$569,524

The province of British Columbia has contributed during 1916 to 1920 toward the cost of maintaining hospitals in its province \$1,329,245 more than the province of Alberta and \$875,391 more than the province of Saskatchewan.

The deputy provincial secretary of this province also states in a communication dated October 21, 1921:

"We do not make any distinction between municipal hospitals and those established in unorganized districts. They are all paid upon the same scale, which is as follows:

First 1,000 days' treatment.....	\$1.00 per diem
The next 1,500 days' treatment....	.70 per diem
The next 2,500 days' treatment....	.55 per diem
The next 5,000 days' treatment....	.50 per diem
Subsequent treatment .....	.45 per diem

"For patients suffering from tuberculosis of the respiratory tract we pay \$1.00 a day without reference to the number of patients treated in the hospital.

"In addition we occasionally give special grants for building or other purposes.

"I may add that the department now has under consideration a revision of the scale set down above which, if carried out, will mean an increase of the amounts given."

It will be realized from the foregoing that the province of British Columbia not only contributes a very much larger sum towards the cost of maintaining hospitals than either the province of Alberta or Saskatchewan; in fact it contributes more than these two provinces combined, yet it contemplates in the very near future increasing the amount of the contributions.

It will be seen from the statement of comparative hospital statistics that the deficits of general hospitals which have to be provided for out of tax levies represent, in the majority of cases, considerable sums of money; also that the percentage of patients from points outside the municipality which has to bear this taxation varies from 23 to 58 per cent. It must therefore be admitted that general hospitals are not only providing a service for the communities in which they are located but also a considerable service for the surrounding country. It would appear that there is some justification for a request to the provincial government for a larger grant towards the maintenance of general hospitals.

It must be remembered that the larger cities, in addition to providing adequate hospital accommodation for their own and outside patients, also have to bear a considerable expense for other health services which in effect are a provincial benefit. For instance, if the school board provides medical and nursing facilities in order to build up and safeguard the health of the children for future years, the benefit is to the province as a whole and not to any one community. The large expense which a city is put to in treating cases of infectious disease is caused to a certain extent by transients and persons coming in from the country, since it is often impossible to collect the costs of treatment either from the patients or the municipality from which they come.

The total cost to the city of Edmonton for hospital

maintenance, public health, etc., in 1920 is made up as follows:

Royal Alexandra Hospital—		
Tax levy	\$93,436.76	
Capital charges	32,983.04	
Deficit for year	10,497.01	\$136,916.81
Isolation Hospital—		
Tax levy	\$36,388.99	
Capital charges	10,644.99	
Deficit for year	20,475.38	67,509.36
Public Health Department..		31,473.82
Public school board's expenditure on medical, dental and health inspection.....		19,950.00
Grants by city council to private hospitals and other organizations for attending the sick		16,875.00
Total cost of maintaining and restoring health.....		\$272,229.99

It will be realized from the foregoing what health service costs in the community, and we should be correct in making the following deductions:

(1) That the provincial government is not contributing its fair share towards the cost of maintaining hospitals.

(2) That there is a waste of public money due to lack of centralization in control of all health service.

(3) That the best service is not being obtained for the money expended, due to lack of coordination.

(4) That through the lack of coordination all is not being done which should or could be done to maintain the health of the community so as to reduce to a minimum the necessity for hospitals for the restoration of health.

It is a comparatively easy way to overcome one's financial difficulties by suggesting that someone else carry the burden. The provincial government probably has financial difficulties of its own and will find it very hard to increase its contribution towards the maintenance of hospitals. Nevertheless, as it is not so much a question of endeavoring to shift the burden as more equitably to distribute the same, it would appear that the larger municipalities where every convenience and scientific appliance are provided for dealing with major operations, not only of the citizens in the community in which the hospital is located but also for patients from outside points, would be justified in making this request upon the provincial government.

The Free Hospital League of Calgary suggests that hospitals be supported on a tax basis, that \$1.00 per day for general and semi-ward fees be allowed the hospital per patient, and that all fees be abolished for diagnostic and clinical facilities and for the surgical ward and supplies.

It will be realized from the statement of hospital statistics, which shows the deficits of some hospitals varying from \$8,656 to \$136,916 and with present revenue from \$2.78 to \$4.16 per day, what a very great increase will have to be made in the tax levy in order to cover the expenditures of such hospitals with a revenue of only \$1 per day.

It surely must be realized that local taxation is already as heavy as taxpayers can bear and if hospitals cannot be made self-supporting then revenue must be obtained elsewhere. It will be also noted from the statistical statement that the hospital in Halifax is entirely supported and maintained by the provincial government.

It is suggested that the financing of our larger hospitals would be simplified if the provincial government

maintained and operated general hospitals in a few of the larger centers where patients could receive free treatment; all other hospitals would have to be self-maintained by charging fees adequate to meet their expenditures.

That free treatment should be provided for those who cannot pay the very high hospital charges of today will be conceded by all. It is an undisputed fact that poor people cannot afford to be ill, and in consequence a comparatively slight ailment, through lack of treatment, will eventually develop into a very serious illness often resulting in a major operation and afterwards a ruined physical condition. Such a state of affairs cannot be allowed to continue if we wish to maintain our self-respect and if we wish our communities and our provinces to be built up on the higher social ideals which have been recognized since the war.

If the cities and provinces cannot afford, with their present sources of revenue, to bear this increased burden of expense then some other source must be found, either by a direct hospital or poll tax or, by part of the revenue now derived from the amusement tax being devoted to this purpose.

In addition to finding other sources of revenue to finance present hospital expenditures and to provide free hospital service to those who cannot afford it, there are also the other necessities of consolidating health service and expenditures so that 100 per cent value will be obtained for every dollar expended and reducing hospital expenses by prevention of disease.

It is suggested that all matters of public health and hospital accommodation should be consolidated under a local health council consisting of the city council with a number of co-opted members whose duty would be to control and govern:

- (a) The sanitation of the community.
- (b) Baby and child clinics.
- (c) School medical inspection, health nursing, physical culture.
- (d) General and isolation hospitals.

Public health is an important public utility and like all other utilities cannot be maintained at a high standard unless under the supervision of an expert. Why should not the work of a public health department, public school boards, clinics, hospitals, etc., be concentrated under one experienced head similar to the superintendent of any other public utility? Some persons appear to hold the extraordinary idea that better efficiency will be obtained by creating innumerable boards. Such boards are usually a failure because in the majority of cases the individual members have neither the time nor experience to deal with such matters.

The Free Hospital League of Calgary suggests that all health activities be coordinated into one department under the mayor. Can anyone imagine what kind of efficiency and continuity of policy would be obtained under a system which might have a new departmental head every year with probably no experience in health matters?

The following phases of public health should therefore be consolidated under an experienced health superintendent:

I. Maintenance of Health or Prevention of Disease.

Under this heading would be consolidated:

- | | |
|-------------------------------------|---|
| Sanitation | { Health department. |
| | { Health and school nursing. |
| Clinics | { Charitable and other clinics taking care of |
| | { babies and children before school age. |
| Medical inspection of children..... | { The school medical and dental departments. |
| Physical culture.. | { The city and school athletic and physical culture institutions. |

II. Restoration of Health.

Isolation and general hospitals.

The expenses in connection with facilities for restoration of health would depend upon the success which would be attained in preventing disease and ill health. If all the phases of public health were directed by an experienced supervisor, many cases which now seek and obtain relief at our public hospitals would never reach that stage because they would receive adequate and proper treatment from nurses experienced in hygiene and public health.

It is not necessary for me to point out to a convention composed of trained nurses and medical men of considerable experience the importance of the child clinic and the advantages to be obtained from physical culture. The money expended upon these two services will be repaid a thousand times by the money which it will eventually save by reducing the number of patients to be treated at our hospitals. It is not sufficient to provide for spasmodic lessons in physical culture in our schools. If we want to be a strong, virile race, organized sport and recreation must be provided not only for the boys and girls while they are at school, but also for young and middle aged men in business. Community gymnasiums and swimming pools with properly trained instructors could easily be made self-supporting by charging a small fee.

While economy and retrenchment are absolutely necessary in all branches of municipal, provincial and dominion governments, it would be false economy to restrict too great an extent expenditures upon public health, yet it must be realized that full service is not being obtained for the money expended, through lack of centralization.

While the government of this province, like the city administrations, will plead lack of funds, the province of British Columbia has found a source of revenue which will produce a revenue of \$3,000,000 per annum and which will enable it to make larger contribution to its hospitals.

This revenue is obtained by the government controlling the sale of liquor.

Hospital Revenue from Liquor Sale

No one today would advocate or desire to see the same conditions re-established as obtained before the so-called prohibition legislation was enacted into law, but at the same time it must be realized by all those who are observant that a condition of affairs exists today which should not be tolerated by any self-respecting community. Some druggists and others are making large profits out of liquor, which would probably equal, taking the province as a whole, the amount of revenue which is now obtained by the provincial government of British Columbia. In addition, the liquor which is being sold is of such poor quality that is very detrimental to the health of those who drink it. No country has yet been able successfully to establish absolute prohibition and if it were possible to stop the importation of liquors into the province, something infinitely worse and more harmful would take place, —stills.

It would be very much better, therefore, if the sale of liquor was controlled by the government and any revenue which was derived from its sale be set aside as a special fund to improve the health and hospital conditions of the province rather than allow a system to continue which allows a few to make enormous profits.

The building up of the health of a community and the providing of adequate means for physical culture will be far more likely to bring about the results of temperance and total abstinence than any hypocritical system of prohibition.

Health and cheerfulness make beauty.—Cervantes.

NURSING AND THE HOSPITAL

Conducted by CAROLYN E. GRAY, R.N.,

Department of Nursing Education, College for Women,
Western Reserve University, Cleveland, Ohio

THE GROWTH OF HOSPITAL LIBRARIES

BY EDITH KATHLEEN JONES, GENERAL SECRETARY OF THE DIVISION OF PUBLIC LIBRARIES, DEPARTMENT OF EDUCATION, MASSACHUSETT; FORMERLY LIBRARIAN, McLEAN HOSPITAL, WAVERLY, MASS.

ALTHOUGH the American Library Association War Service did not originate the idea of hospital library work, it did demonstrate to the country at large the value of books as recreational, educational and therapeutic factors in hospitals, and of all the civilian welfare organizations which, during the war, operated in camp and hospital for the benefit of our soldiers and sailors, there is none which has more justified itself, made more lasting impression, been more thoroughly absorbed by the government into its peacetime organization and more enthusiastically carried over into civilian life than this hospital library service.

Before the war, the number of organized libraries in hospitals and sanatoriums might have been counted on the fingers of one hand. Books they had, gifts, discarded from attics, old bound magazines, usually covered with brown paper and hidden away in linen closets or storerooms; but a mere collection of books never yet made a library. McLean Hospital, in Waverley, Mass., a private hospital for mental cases, was the first to insist on the value of a carefully selected library for its patients with a trained, resident librarian in charge; but, aside from its model library, its chief claim to the honor of being the pioneer in this work is that it formulated the principles governing the organization and administration of hospital libraries. These principles, gathered from its experience, are: first, an organized central library, as charming and homelike as it can be made; second, a librarian with personality, knowledge of books and library technic; third, an annual appropriation sufficient for the purchase of new books as they are published; fourth, the exclusion of morbid, gruesome and unwholesome literature.

McLean Hospital reorganized its library along these lines in 1904 and its librarian began to publish her the-

ories and experiences in 1910. In these same years the Massachusetts General Hospital in Boston also blazed a couple of signs along this trail, for in 1904 it, too, reorganized its patients' library, appointed a librarian and became, so far as is known, the first general hospital to institute regular book service to bed-patients. This service became so popular that some means had to be devised to carry the books to the wards in greater numbers, and, in 1910, trustees and doctors put their heads together and designed the little "bookcart" which, eight years later, was amplified and enlarged into the A. L. A. hospital bookwagon that trundled miles and miles of war hospital corridors carrying its welcome loads of adventure and ro-

manance to thousands of sick and wounded men. This indispensable adjunct to a properly equipped modern hospital as originally designed is made just wide enough to pass between the cots of a ward and just high enough for the patients to reach the books while lying in bed. These essentials are also features of the A. L. A. book wagon, but the latter has two trays instead of one, each holding fifty books, is longer, heavier and has larger wheels.

Great ideas generally seem to be born twins or triplets and this patients' library idea was triplets. In the same year that the Massachusetts General was discovering its value and



A group of happy convalescents in a U. S. Veterans' Hospital (Base Hospital, Camp Travis, Texas).

McLean was beginning to work out the theory that the right kind of books might be a decided help towards recovery in cases of mental illness, the secretary of the Iowa Library Commission, Miss Alice S. Tyler, happened to visit one of the state hospitals for the insane and was appalled by the hopeless, aimless way in which the patients just "sat around" with nothing to occupy their minds. It seemed to her that the library commission might get books to these state institutions as well as to public libraries, and then, finding, as McLean

and the Massachusetts General Hospitals already had discovered, that books alone are useless unless there is someone to make the connection between the book and the patient, she interested the legislature to authorize the appointment of an institution library supervisor. Thus was born the state institution library idea. Vermont, Minnesota, Nebraska, Indiana and one or two other states quickly followed Iowa's lead, some of them operating through the state board of control and some through the library commission. Realizing that few state institutions can afford the "unit" system employed by the two Massachusetts hospitals,—that is, the development of their own libraries under salaried librarians, these states devised the "group" system; that is, they appointed the librarian to organize all these libraries, select proper books, circulate traveling libraries, and train in someone,—doctor's wife or nurse or patient—to act as librarian in each institution under her supervision.

A few years later the American Library Association appointed a committee with a very long name which is generally known as the Institution Library Committee. Under its auspices the A. L. A. Publishing Board issued "A Manual for Institution Libraries" by Carrie E. Scott and (in 1913) "A Thousand Books for the Hospital Library" edited by Edith Kathleen Jones. This list is now out of print, but the A. L. A. hopes to publish an entirely revised edition supplemented by much new material early in 1922. This committee, though its work was interrupted during the war, is still in existence and endeavors to interest state and county institutions in the need of adequate library service in hospitals and prisons.

Supplying the Soldier's Book Demands

When the war broke out, this was the hospital library situation: a few states had learned to operate them in groups; a few private hospitals had discovered the value of recreational reading as a therapeutic agent and the advantage of carrying books to wards so that bed-patients might make a selection themselves, what books were wholesome and to be recommended, and how to interest patients in reading. Therefore, when in the spring of 1918 the government allowed the A. L. A. War Service to place women librarians in the base hospitals, all this knowledge lay ready to hand and the association had only to organize its forces along lines already mapped out. Miss Caroline Webster was placed in charge of the hospital department, field representatives were assigned to certain territories and librarians were established in the large army and navy hospitals. The next thing was to get the books demanded by the men, and, well, we who were inside the hospitals remember the entreaties in those



The Sioux City fleet of hospital book wagons.



The hospital library at Ellis Island. Immigrants who are given the best books of a country immediately upon arrival should make good citizens.

early days for Zane Grey and Harold Bell Wright and Tarzan of the Apes! Unknown to many librarians, scorned by many more, these and their kind were the only recreational books the sick boys wanted and these they read with avidity. When they became convalescent they turned with equal avidity to treatises on machine guns, aviation engines, navigation, automobile trucks—but nothing between the two extremes would they look at! And on the day following the armistice the whole army and navy threw education to the winds and went on an orgy of Zane Grey. And him they still demand, together with Curwood and Raine and other tellers of tales of the great west and the far north.

As I write of those days of the A. L. A. War Service, my mind goes back to those brave, eager, warmhearted, merry lads, setting forth with such high faith and courage on what was to them a great crusade. I see an embarkation hospital in May, 1918; the boys chafing at the delay in getting over, tender with one another, courteous and helpful to us women, appreciative of what we were trying to do for them, longing so much for a little mothering—just boys. I remember those hospitals under the awful scourge of influenza that fall, when the boys died all around us, when those of alien birth forgot their English in their delirium and, as one interpreter said, "called for their mothers in every language under Heaven." At Camp Devens the library was turned into a morgue, but in all the hospitals the librarians stuck to their posts and, often with gas masks on, wheeled the book wagons through the wards or presided over outdoor tables of books for convalescents.

Library Service to the Wounded

No one who lived through them can ever forget those days in the New York hospitals when our first wounded were brought home. Another of my memories is of the hospital ship which sailed up the river to the Navy Yard in Charleston, S. C.; the long line of ambulances and stretchers bearing the men to the hospital, the joy of the men to be home again, the raid upon the library that Sunday afternoon by every man who could get over on crutches or in wheeled chair, and the cries of delight which hailed "the booklady" when the librarian and two orderlies loaded down with books appeared in the wards.

And then, in those hospitals filled with gassed and wounded soldiers, we began to be aware of a difference. Those lads whom we had sent overseas to fight our battles,

merry, lighthearted idealists, wearing youth like a gay cockade, had returned men—their youth irrevocably gone, and always something of somberness and pain and never-to-be-forgotten horror in their eyes. Shattered in health, crippled, often with a mental twist, and with wrecked nerves, more than ever they called for books. Adventure and romance they wanted, to still for a time remembrance and suffering; books on every trade and profession under the sun to help them learn to earn a living in a changed world where they would be handicapped by wounds and disease; poetry for inspiration; history and travel and science for education. The book wagons were busy in those first days of peace, and they have grown busier ever since as the number of men in these hospitals has steadily increased until there are now 30,000 ex-service men under treatment in the U. S. Veterans hospitals alone.

June 1919 found 145 librarians and six supervisors in the A. L. A. War Hospital Service in America and 121 organized hospital libraries in France. In November of that year the A. L. A. gave up its work with the army and navy, turning over to them all libraries and books and personnel in those departments, but continuing its service in hospitals for disabled soldiers until November, 1920, when, for lack of funds, it was obliged to suspend this work. However, so great was the protest from commanding officers, patients and nurses over the threatened loss of their libraries that the Red Cross came to the rescue and financed the salaries of the librarians until the A. L. A. was able to assemble sufficient funds to pay back the loan and carry on the work until July, 1921, when the government assumed the responsibility. In the spring of 1921 Congress appropriated \$100,000 for the purchase of books and magazines for the beneficiaries of the war risk insurance, and the comptroller of the treasury, under which department the veterans hospitals are placed, later ruled that funds might be expended for personnel to select these books and administer the libraries in these hospitals. Under just what terms and by whom these libraries will be operated is not known, but there is little probability that the work will be given up. The medical officers speak in the most emphatic terms of the value of books and the professional spirit of the librarians who are able to get the men to read really worth-while things and in some hospitals to organize course of study. The Public Health Service is stressing medical as well as general libraries in their hospitals, and the librarians will be expected to administer both of these.

So much for the A. L. A. library service in the war hospitals. It demonstrated the value. What has been its influence on civilian hospitals?

Civilian Hospitals Awake to Need

Doctors and nurses returned from the army to their home towns, remembered the organized libraries and selected books, the bedside service, and the contented patients of war days and wondered why something of the sort would not work in city hospitals. Librarians who had served in the camps looked at the full shelves of their home libraries and remembered how much "the boys" had liked those books when they were sick. So one of these librarians went to the superintendents of the six general hospitals in his city and offered to start a "drive" for permanent collections of books for each hospital, lend books from the public library, and provide a hospital librarian from his staff who would visit the wards and carry books to the bed patients. Everyone was enthusiastic, six book wagons of the A. L. A. pattern were bought, and

Sioux City became the proud pioneer in the new type of "group" library administration whereby the hospital and the public library combine to furnish books to patients. Many other cities and towns have followed this plan with satisfactory results.

This "group" system is undoubtedly the better method of providing book service in small hospitals, but the "unit" plan as followed by McLean, Bloomingdale, Butler and Shepard and Enoch Pratt mental hospitals and the Massachusetts General, Barnes and Lakeside hospitals for general and surgical cases, is without question the ideal one for large hospitals which can afford it. Each of these hospitals has its own medical and general libraries, funds for buying new books and a librarian attached to the staff. Lakeside Hospital has also a very fine collection of books on nursing and allied subjects for the use of its training school, and it draws heavily upon the Cleveland Public Library for supplementary reading, talks to nurses on books, and cooperation in every way along these lines. At McLean Hospital, before the war disrupted the training school, courses on books and reading and on fine arts were given by the librarian to the nurses as a part of the curriculum.

Therapeutic Value of Books

As the value of hospital libraries is now fully acknowledged, their future seems assured. The superintendent of one general hospital remarked: "These libraries are wonderful things for the patients. We doctors used to think that when we had performed a successful operation our duty was ended. If the patient died of homesickness after it, that was none of our concern. We knew that a contented mind was half the battle, but we took little pains to make him contented. Now we have learned that the hospital must look after the mental health of a patient during convalescence, and we have learned that wholesome books do more than almost any other one thing to keep him happy and help him get well."

If there were space enough I might tell of the book service in one of these big general hospitals; of the children eager for picture books and the story hour; of the foreigner, whose eyes light up pathetically at sight of his own language on the printed page; of the student enabled to keep on with his classes through books borrowed from school or public library; of the rough mechanic who begs for an Alger one day and an abstruse book on machinery the next; of the sailor who frets for the smell of salt water till Conrad's "Nigger of the Narcissus" and a book of Japan are put into his hands; of the blind man, tossing restlessly, lips moving, face tense and strained, hands clutching the rods of his cot, who relaxed completely when "Treasure Island" in braille was given him. The work is so intensely human, so full of pathos and humor, there is little wonder that librarians engaged in this service are an enthusiastic group.

The war experience taught these librarians many things, but the fundamentals as formulated by McLean Hospital long before the war remain unchanged. We still insist that the books must be wholesome and interesting. We see more clearly than ever that hospitals must provide proper books for its nurses and employes in order to keep up the morale. And most emphatically we stress the need of experienced librarians to organize and operate these libraries. We know, too, that the most efficient librarian in the world can do little unless she has the hearty support of superintendent and trustees and definite funds at her disposal for the books she wants. Books are her tools. Give her these and she can build a library which will be one of the best therapeutic agents in the hospital.

THE SCHOOL OF NURSING IN THE SMALL HOSPITAL

By GRACE H. CAMERON, UNIVERSITY OF THE STATE OF NEW YORK, ALBANY; MEMBER OF BOARD OF NURSE EXAMINERS, NEW YORK

IF WE accept the present-day definition of the hospital's function—the care, cure and education of the sick; the training of physicians and nurses; the advancement of medical and surgical knowledge; and the prevention of disease—then the hospital must truly be the health center of the community. This the small hospital can be as well as the large.

Generally conceived, the small hospital is an institution of from fifty to 100 beds, averaging forty to seventy-five patients daily. It is the hospital of the small town and the surrounding rural community. Or occasionally it may be found in cities with a clientele from a limited area.

From these smaller hospitals come many of our nurses. They are not unlike the product of the big nurses' training school, for the woman who is graduated by the large or small training school should possess essentially the same knowledge.

Nurse Has Wide Choice of Service

Nurses' training seems the best preparation for many positions young women are filling today and even in the legitimate field of nursing they have a wide choice of service. Sir Auckland Geddes says that "without expert nursing, half—no three-fourths—of the practical value of the scientific knowledge of the medical profession would be lost." By expert nursing is not meant the care of the sick alone; the nurse today is invaluable in the laboratory, in research work, in social service in the classroom and executive office.

Whether it is advisable for a small hospital to maintain a school for nurses depends on several factors, such as its ability to furnish adequate equipment, prepared teachers, ample clinical material and facilities for recreation.

In the first place the school of nursing must be recognized as a teaching unit, not as a cheap method of obtaining hospital service. Too, it must offer special inducements to counteract the attraction of large centers and the prevailing tendency to despise the small, even though efficient, hospital.

How, then, may the small institution attract students? This brings us to a consideration of teaching material and equipment. No matter how small the hospital if there can be offered a staff of well prepared teachers, full equipment and adequate clinical material, there will be no lack of students. Of primary consideration is clinical material—surgical, medical, obstetric and pediatric patients. Frequently the small hospital has so active a service that a student has the care and observation of as many types of cases as a larger institution could furnish her. It is not the number of beds which determines the teaching possibilities but the number of acute cases. Chronic and convalescent cases, of course, have very limited value as teaching material.

Individual Room is Due Student

Furnishings and equipment in the small hospital must conform to the accepted standards. This does not mean that they need embrace all the latest mechanical devices and the most expensive furnishings, but they should be commensurate with the work to be done. If the hospital is in a remote country district, then the equipment must be more complete; in districts where isolation is not a

factor several hospitals can combine certain phases of classwork and practice.

Quarters for nurses should include separate bedrooms for each individual, a bath and toilet for each six students, social rooms for general use and special classrooms. The student of nursing has every right to demand an individual room. After the stress of a day spent with abnormal persons, and in study and recitation, she needs a quiet restful place for relaxation and sleep. This can rarely be obtained if there is another occupant in the room. Two persons are not apt always to want to do the same thing at the same time.

If possible nurses' quarters should be in a separate building. In it the whole first floor may be given over to reception and sitting rooms, classrooms and possibly teachers' quarters. The classrooms should include laboratories with the necessary equipment for instruction in chemistry, bacteriology and dietetics; a regulation classroom with charts, models, outlines and reference books; and a larger lecture room which may also be a demonstration room where the student is instructed in the methods of practical procedure.

Recreation Facilities Should Be Adequate

Recreation rooms should be large enough for social gatherings. This may often be accomplished by the installation of folding doors between several smaller reception rooms. If possible there should be a gymnasium in the basement where basketball, indoor baseball, bowling and other games may form a welcome diversion for the student nurses. Directed physical exercises do much to promote the health of the school.

Sleeping porches and roof gardens are being added to many nurses' homes recently built. In planning for student's quarters, the size of building is always regulated by the number of hospital patients. The general opinion is that the ratio of nurses to patients should be 1-5 day service, and 1-10 night service in the large wards; and for private rooms, 1-3 day service and 1-5 night service. However as stated in *The Standard Curriculum*: "The ratio of students to patients cannot be worked out on any basis which is capable of general acceptance because of the many and various factors entering into the situation." It is better to build for more than the present requirement, for all progressive hospitals grow.

Superintendent Should Not Teach

The selection of the teaching staff needs very special and definite deliberation. Nurses are professional women and so must have professional training. This cannot be given if the superintendent or principal conducts the greater part of the classwork, with a few scattered outside lectures whenever the visiting doctors have time to give them, and if she supervises the practical work and arranges for clinical observation. The superintendent of the school, however small, needs all her time for administrative and executive work. Today all recognized schools have a graduate dietitian to teach food values and composition. She may preferably be a resident, having charge of the feeding of the hospital family as well as the teaching, or she may come at stated times for classwork both in theory and practice cooking. The study of

chemistry and bacteriology must be directed by a qualified teacher. Chemistry classwork can often be arranged at the high school, if the students have not had a preparatory period in a university department, and if there is no instructor qualified to teach the subject. The bacteriologist, either resident in the hospital or employed by the county, may give additional lectures and practical laboratory work if so desired. There should be in the small nursing school one regular instructor whose whole duty it is to prepare for general classwork and teach; an assistant to the superintendent, who may take charge of demonstrations and the supervision of the practical work, assist with the office work and with the training school records; and a night supervisor who continues the work of the practical teacher. This staff—principal, assistant instructor, dietitian, and night supervisor—is essential to a well conducted school. The medical staff may and do often give excellent lectures on advanced work. They should be paid for their work and so held to time and preparation.

The number of students which should be in training in the school at any given period has been noted under the planning of quarters. Whether the student should receive a remuneration must be argued and decided by the hospital authorities and those responsible for the administration of the training school. Many schools are asking an entrance fee and placing the school on a level with other teaching institutions, giving only room, board, uniforms and laundry. This is the best method. But as so many schools still give a monthly allowance this question must be decided by the individual hospital.

Eight Hour Day for Nurses

Administration of the training school for nurses goes hand in hand with organization, for if the hospital has equipment for organization, and the teaching staff, there remains only the systematizing of work and time for the development of the school. Much has been said about the hours of duty, and able discussions of the subject have been heard and read. The eight hour day is the only feasible plan, if the hospital is to have a class of live students. Admission requirements and the length of training must be those suggested and required by registration boards, and differ, at the present time, in each state. An increasing number of schools are requiring full high school work and admitting younger students.

The work both theoretical and practical is usually divided into four periods—preliminary, first, second and third year. The best schools today are recognizing the advantage of a longer preparatory period. Four months at the beginning of the course is none too long for intensive study. During this period the minimum of time is spent with the patient and the student is almost wholly occupied with classwork and practice of procedures. The fundamental principles of the science of nursing including anatomy, chemistry, bacteriology, drugs and solutions, and dietetics must be comprehended in these few weeks. Fortunate is the school near enough to affiliate with the department of nursing in a university!

Exact and detailed records of each pupil should be so filed as to be easily and quickly obtained for reference. By a systematic use of these cards each student is rotated regularly and gains equal practice in the different wards and departments of the hospital. Each superintendent must arrange these services according to the size and activity of the hospital.

As to discipline, the old order changes. With the advance in training comes progress in government. Students in many training schools are practically and efficiently

governing themselves. In other schools a committee composed of interested women acting with the superintendent prescribes the regulations as to conduct, social events, comfort etc. It will depend altogether on the students whether they undertake the character building student government plan or refuse the responsibility and accept the control of a committee. For without the *positive* interest of the student body, student government cannot be successful.

There are both advantages and disadvantages in the small school. The life is more home-like; physically the work is less arduous because of smaller buildings and fewer patients; and there is a personal knowledge and intimate contact between the student and the school staff not possible where the numbers are large. The nursing care, too, is apt to be more personal and sympathetic, since the nurses have more time to devote to each patient. The danger in the small institution is that because of lack of pupils and lack of funds for the proper maintenance of the school, exploitation of the pupils may result. This cannot be if there is the proper teaching staff and a conscientious carrying out of agreement. Even if the equipment be meager and the hospital isolated, the principal and her assistants can most effectually assist in the development of the student by the organization of clubs, by personal supervision of her reading and by arousing interest in outside matters. Special study in nursing history and progress is more easily attained with a smaller number of students, and a foundation of loyalty to, and becoming pride in her chosen profession may be more solidly built. There is great opportunity for the right woman who undertakes the management of a small school; to live with, to instruct, to watch, to develop, and to direct the unformed aspirations of eager, enthusiastic, adventurous young women is a peculiarly delightful and satisfying job.

WHY IS NURSING A PROFESSION?

One of the present day cries is that "nursing is a profession." It is, but is not made so merely by stating the fact. A trade grows into a profession when it begins to have ideals and a soul, and when the members of that trade are united in the effort to attain the one and express the other, says a member of the San Francisco County Nurses' Association. The real members of the nursing profession are women of high ideals and broad vision, and it is too bad that nurses of smaller vision sometimes give a wrong impression to the rest of the world. One nurse, when asked if there were a future in nursing, replied by telling the enviable state of a nurse friend of hers who had a position with a wealthy family which did not need her services, and which lavished so many presents upon her that she was able to put most of her salary in the bank. Women of the type who could hold such an ideal of service as this are being taken into hospitals today because the hospitals must be run. But the only women who can uphold the ideal of the profession are women who have the power to think for themselves, and a vision broad enough to grasp the social, economic, and political aspects of life as it is.

"It is a very common error among the well to think that with a little more self-control the sick might, if they choose, 'dismiss painful thoughts,' which 'aggravate their disease.' Believe me, almost any sick person who behaves decently well, exercises more self-control every moment of his day than you will ever know till you are sick yourself."—Florence Nightingale.

DIETETICS AND INSTITUTIONAL FOOD SERVICE

Conducted by LULU G. GRAVES,
Supervising Dietitian, Mt. Sinai Hospital, New York.

THE DIET OF NERVOUS PATIENTS*

By SYDNEY KUH, M.D., RUSH MEDICAL COLLEGE, CHICAGO

THE belief is very prevalent that there are certain foods, notably those rich in fats and in phosphorus, which have a specific beneficial effect upon the group of functional nervous diseases, i.e., neurasthenia, psychasthenia and hysteria. I know of no scientific data which would justify such a belief, nor does our bedside experience give it any support. It probably owes its longevity largely to those whose interests prompt them to keep it alive, that is, to the manufacturers of patent nostrums and proprietary drugs.

In spite of this, diet is of importance in the management of these maladies, for if we know nothing that has a primary beneficial action there are very frequently complications present, sometimes the cause of the nervous condition which demand imperatively certain restrictions in the patient's dietary. There is furthermore a group of stimulants, not strictly speaking food, but nevertheless all too commonly a very important part of our diet which require consideration.

Every layman knows of the harmful effect of coffee and tea in large quantities, while as to the advisability of permitting alcohol there is still some difference of opinion. There are certain considerations to be taken up a little later which often justify us in permitting coffee and tea in moderate quantities. Never should either be given late in the day, if the patient's sleep is at all disturbed. To this rule there is one exception: a considerable number of those, who suffer from migraine, will get relief from the severe pain during the attacks from only three remedies—strong coffee, opiates and headache powders. The latter are not always safe; their harmful influence upon the action of the heart is well known; they are also not always effective. That then in certain cases is the choice between a narcotic and coffee. Since the disease is usually incurable, the remedy will have to be given during many years and the danger of establishing an opium habit is correspondingly great. Those patients demand relief from their suffering and of those two remedies even a strong cup of coffee is certainly the lesser evil. Unfortunately it too will not infrequently fail to bring the desired relief.

Of some little importance seems to me a difference in effect of coffee and tea upon the emotional state of a few—though not all—persons. The former has a tendency to excite, to create a feeling of depression, of restlessness or apprehension if taken in larger doses, while the latter

has very often a pleasant exhilarating and stimulating action, a difference which deserves consideration.

As to alcohol, there is, as I have already said, a difference of opinion. On the one hand we know that with many it has a decidedly cheering influence not to be despised as a help in cases of mental depression, even though it give only temporary relief. We know too that there are many who after a glass of beer or wine will have a quiet and restful night, when without it they fail to get the desirable amount of sleep. Surely such a small quantity of a mild alcoholic would be preferable to a regular dose of some sleeping powder. But we know too of the danger of establishing a habit in neurotic individuals, a danger much greater in them than in those whose nervous systems are normal. The patient need not know when he is taking a hypnotic, and it can be made impossible for him to continue its use after the need for it has passed, but the flavor of wine or beer is too well known to be disguised. Could we have any assurance that our patients would be satisfied with the small doses, which alone we are justified in ordering, then, and only then, could we safely rely upon alcohol in these conditions. This is not, unfortunately, always the case. I have never been free in advising the use of stimulants and with growing experience have used them less and less. In the vast majority of cases they undoubtedly do more harm than good.

Since I have been asked to discuss the significance of diet in social problems and I know of no other article of diet which has such a significance, perhaps this may be the place to say a word about the importance of alcohol in this respect. It is not my intention here to hold forth about the economic and moral effect of alcoholism and to bore you by a repetition of well known facts. But a new situation has arisen within the last few years, all of the results of which are perhaps not quite so well known. We now have nation-wide prohibition which does not prohibit. There has been under the new laws no material decrease of nervous disease due to alcoholism. Undoubtedly the amount consumed is somewhat less than formerly; the economic waste, however, has not been materially decreased since the price is a great deal higher and the effect of the home brew is a great deal more harmful than that of the old article, bad as that was.

The worst feature of the new law, however, has been in effect upon those women who formerly satisfied their craving for stimulants with whiskey. Now finding it difficult to obtain, they are taking, in increasing numbers, to the habitual use of narcotics and other substitutes a

*Read at the annual meeting of the American Dietetic Association in Chicago, October 24-26, 1921.

great deal more harmful. And this is not surprising. Had our legislators gone to the trouble of making a study of the experiences of other countries following attempts at regulating the use of alcohol, they would have known that what happened was sure to come. Do not misunderstand me; I am not opposed to prohibition, but I am emphatically against the present travesty on prohibition with its disastrous effect upon the honesty of our public officials and upon the health of the community.

In ordering a dietary it is always important to bear in mind the fact, brought home by experience in institutions particularly, that a monotonous diet, though it contain ample nutriment, may in course of time lead to loss of weight, to anemia and even to tuberculosis. Another element of great importance in this respect are psychic influences, potent factors in the assimilation of foods to all of us, doubly important in the neurotic individual with his greater susceptibility to such factors. It did not require the famous experiments on dogs to teach us that lesson. We all know from personal experience how our appetites are influenced not only by the method of preparing foods, but almost equally by the way in which they are served. With many of us, too, it makes a great difference whether we take our meal in the presence of congenial company flavored by lively and interesting discourse, or alone. When we are worried or depressed even the best of food fails to appeal to us, and if we eat anyhow it is liable to cause us more or less discomfort which means that it is not being properly assimilated. These considerations, as I have already stated, are of special importance in our nervous patients.

You are in the habit of studying the results of your dietary regime by weighing your patients. To check up by this method too frequently in the neurotic is often distinctly harmful, because it gets the mind of your patients upon their illnesses and because they are very liable to be worried by such slight fluctuations as are well within the range of the normal.

Diets to Cure Digestive Disturbances

Many nervous people show distinct evidence of undernourishment. They are thin and anemic, have a poor appetite or complain of other symptoms suggestive of gastrointestinal disturbances. There are here two possibilities. In some instances a primary digestive disturbance leads secondarily to nervousness; in others the so-called "nervous dyspepsia" is but one of the symptoms of the underlying morbid condition. With modern laboratory methods there should be little difficulty in deciding which malady is primary. Where we deal with the first of these possibilities, a strict diet depending upon the exact type of the primary illness is of course indicated. In the second group a modified Weir Mitchell rest cure with overfeeding will usually give the best results. Only rarely is an attempt made in these days to follow accurately the directions given by the author of this method. He ordered an exclusive milk diet for the first few days, followed by a very restricted regime with, again, a great deal of milk, of fats in other digestible forms, etc. These strict rules of Weir Mitchell with their very limited list of permissible foods have long since been found impractical for the majority of cases. The greatest possible variety is desirable, because with it the patient's appetite will be at its best as will his ability to assimilate the largest quantity of food.

Since the treatment is used particularly with patients who are underweight, we use butter very freely, not only spread on bread, but also in the preparing of sauces, soups and vegetables and in the cooking of meats. Fat

meats are less desirable because of their tendency to decrease the appetite. The yolk of eggs is a very useful part of the diet in these cases, since it contains a very large percentage of fat in a very easily assimilated form. The most important thing to be borne in mind is that the more we consider—within reason, of course—the individual likes and dislikes of our patients, the greater will be the total amount of food taken and the more rapid the desired gain in weight. It is a safe rule to permit such patients all those varieties of food, which a sensible, healthy person would take, with the proper emphasis upon such elements as their physical condition would indicate. A great deal of harm is done, I am convinced, in many cases of so-called nervous dyspepsia by too restricted a diet. Not only do we in this way decrease the patient's appetite, but we encourage by such measure the tendency to hypochondriacal ideas, the most distressing symptom in a great many of these cases. It is for this reason that I desire to make all possible concessions to the patient's likes and dislikes that I often permit him coffee and tea in moderate quantities.

Suitable Diets for the Epileptic

Another belief held by many today is that a meat-free diet is of great value in the treatment of epilepsy. Years ago I repeated this simple experiment a number of times: An epileptic would be permitted a reasonable amount of meat for a period of time and then be put on a meat-free diet. I have still to see the first case in which a moderate amount of meat increased the number of attacks in the least. There is another method of treating such cases of more recent origin which seems of very decided value. It is based upon the experience that by decreasing the amount of table salt given to our patients in their food, we can distinctly increase the effectiveness of the bromides, the one group of drugs which is most helpful in limiting the number of seizures. At first a salt-free diet (or rather one as nearly salt-free as it is possible to make it) was recommended, which consisted of milk in unlimited quantities, fruits of all kinds and bread. In the preparation of the latter bromides were used in measured quantities in place of the chlorides. By ordering our patients to consume a definite quantity of bread in a given period of time, we could quite accurately regulate the dosage of bromide. This diet was effective, to be sure, but it proved quite impractical. Not only did a great many of our patients very soon rebel at the monotony of it—and worth while results are not obtained in epilepsy excepting by treatment continued for a very long time—but we soon learned that the quantity of milk necessary to maintain a balance was definitely contra-indicated in a considerable number of cases, as for instance in those with complicating heart lesion or gastroptosis, and that in a fairly large percentage the necessary amount simply could not be assimilated. We now permit our patients a mixed bland diet with the following restrictions: all foods are to be prepared without the addition of salt; meat is permitted only once a day and in moderate quantities then; with each meal three or four grams of table salt are served. This amount the patient may use, as he wishes, in the seasoning of his meal. With the sodium chloride already contained in the various foods, this is sufficient for the needs of the body.

A careful consideration of any idiosyncrasy of an epileptic is important, since experience teaches that any stomach upset, however slight, is liable to bring on an attack. Most of them eat very heartily and very rapidly, and it is fully as important to regulate the quantity of food and to see to it that it is properly masticated as to

control its quality. If there be a tendency to constipation that too must be taken into account in the patient's menu.

There is only one other type of nervous disease in which diet seems of direct importance; that is hyperthyroidism. Here, if the condition of the heart permits, a great deal of milk should be given. The practice, in use some years ago, of administering the milk of thyroidectomized goats is now of historical interest principally, since we have much more convenient and pleasant methods of accomplishing the same results. And while we are on the subject of endocrine gland disturbances, it might perhaps be well to say a word about another therapeutic measure which I had considered obsolete until I was surprised to read only a few days ago that it was to be revived. That is the feeding of the endocrine glands, such as the thyroid, to mentally defective children. This method, too, may well be considered obsolete, since the same effect may be obtained by giving the desiccated glandular substance, a form which is both more palatable and convenient and has the further important advantage that it permits of easy and accurate regulation of the dosage.

In cases of mental disturbance it often becomes necessary to resort to forced feeding, to introduce nourishment by means of the stomach tube. Here we are naturally limited as to the kinds of diet available. The foundation is always milk of which about one quart is given at a time. We add as a rule eggs, two being the usual number, about two ounces of sugar, or, if the patient be constipated, sugar of milk and about thirty grains of table salt. If with this the patient loses weight, the milk can be in part replaced by cream, butter may be added and the amount of sugar increased.

This is a brief review of what seemed to me of importance in the management of the diet of nervous patients. The type will be determined in the majority of instances not so much by the character of the nervous trouble proper, as by that of the underlying or complicating physical ailment. To attempt to discuss all of such possible complications would mean to cover the entire field of dietetics, obviously an impossibility at this time. One point, however, I have attempted to emphasize and I shall in closing refer to again. The tendency to have an absolutely fixed type of diet for certain diseases has led to a harmful restriction of choice. Whenever possible, the patient's likes and dislikes should be consulted. In other words, we should attempt to treat the patient, rather than the disease, a rule which I consider of great importance in the management of all cases but of the greatest value in the management of the neurotic.

NEWS ITEMS

"At the Chicago meeting of the American Dietetic Association it was decided by all Ohio dietitians who were present that we organize an Ohio Dietetic Association to hold its meetings twice annually," says Miss Bertha M. Hyde in a report of Ohio activities in the field of dietetics. "Miss Bess Brinton of Lakeside Hospital, Cleveland, was elected president with the power to appoint chairmen of committees to draw up the constitution and by-laws and to assist in the general organization of the association.

"It was later decided to have meetings in sections in different parts of the state before a meeting of the whole association should be attempted for the purpose of creating interest and enthusiasm for the association. Miss Brinton appointed me chairman of the section which had Cincinnati as its center. Twenty-five letters were sent out from this center, which were rewarded with five replies one of which was a regret.

"The date set for our meeting was February 21. I am glad to say that there were present eleven enthusiastic persons, two of whom were student dietitians, the other nine in active dietetic work. Miss Brieman, Mercy Hospital, Columbus, met with us and brought plenty of 'pep' from that section to our group. The other eight dietitians were Cincinnatians. Three of those present had attended the Chicago convention.

"The purpose of our meeting was to create enthusiasm; and apparently it was accomplished. Everyone seemed glad of the opportunity to meet together. There was felt strongly a need for greater cooperation among dietitians, and a desire for a local organization was expressed by several. This idea will be worked upon and the institutional section of the Cincinnati Home Economics Association, which for several years has dropped out of existence, will be revived.

"We of Cincinnati are glad to have done our bit and sincerely hope that the state association meeting will be many times larger and more enthusiastic than was ours. It is a splendid movement and should be given the hearty cooperation of all red-blooded dietitians."

"The Minnesota Association of Dietitians met on February 9 at the U. S. Public Health Hospital, The Aberdeen, St. Paul," according to a report of Miss Sigrid Skurdalsvold. "The program consisted of a talk by Miss Wood, in charge of the home demonstration work in nutrition in the St. Paul schools, and by Miss Gilbert, in charge of the same department in the Minneapolis schools. There was a report from the executive committee of the National Dietetics Association given by Miss Peterson.

"Election of officers took place and the following officers were chosen for the coming year: President, Miss Margaret Drew, The Northern Pacific Hospital, St. Paul; vice-president, Miss Janet Marson, U. S. Public Health Hospital, Minneapolis; Secretary, Miss Grace Moreland, The State Hospital for Crippled Children, St. Paul; treasurer, Miss Dorothea Olmey, The City and County Hospital, St. Paul; corresponding secretary, Miss Sigrid Skurdalsvold, Norwegian Deaconess Hospital, Minneapolis.

"The February meeting of the Chicago Dietetic Association was held at the Hospital Library and Service Bureau on Friday, the 17th. Mr. Maughn of the National Dairy Council gave a very instructive talk on the dairy industry. Both the wholesale and retail phases of the subject were explained. An interesting discussion followed," writes Miss Elizabeth H. Tuft, secretary of the association.

Miss Esther Funnell is in charge of the diet kitchen at Lakeside under Miss E. M. Geraghty. Miss Eggut who was in charge of the diet kitchen is now supervising the entire kitchen. Miss Funnell was formerly at Harper Hospital, Detroit.

Miss Martha Russell has accepted a position as dietitian at Bridgeport Hospital, Bridgeport, Conn. Miss Russell was at one time acting dietitian at Cincinnati General Hospital.

Miss Elizabeth Powers, who was at Mercy Hospital, Council Bluffs, was recently married to Mr. J. R. Williams of Omaha.

Miss Eleanor Muth has given up her work at Ohio Valley General Hospital, Wheeling, W. Va., and gone to her home. Miss Alice Ferguson succeeds Miss Muth at Ohio Valley General Hospital.

Miss Gertrude Oehmig is developing a dietary department at Shreveport County Hospital, Shreveport, La.

Florence Roller has been appointed dietitian at Lakeview Hospital, Danville, Ill.

RUNNING A TEA ROOM*

By AGNES GLEASON, MANAGER, PARKWAY TEA ROOM, CHICAGO

PERHAPS the most helpful way to discuss the management of a tea room is to imagine one's self answering the questions asked by one who is thinking of establishing such a business.

College women frequently come to me as a pioneer in the tea room business to ask how to go about establishing a business of their own. They are well equipped with education in home economics which our colleges and technical institutes are so wisely giving. Tea room management looks easy. People always tell them there is money in food.

These are some of the points I would have the aspirant consider:

1. Do you love the ordering or preparing of food to please the eye and nourish the body? If you do, that is a good foundation.

2. Have you had any experience in preparing food? A domestic science course is an asset, though not absolutely essential, but you must have a knowledge of the composition of foods which will enable you to handle them safely.

3. The question is usually asked: "How much capital is required, to begin on a moderate scale?" I answer: "There is no such thing as a moderate scale today." The word "moderate" will soon have to be eliminated from our dictionaries for it has no equivalent. The amount of capital needed depends on your choice of location. Rents differ widely in different places. One-third of the amount you have at your disposal should be kept in bank. A rainy week, when receipts fall off, will spell much worry if there is no reserve fund.

4. Location is important, especially in the beginning. Mr. Childs of the famous chain restaurants says in the November *American Magazine* that location is the biggest factor in the success of a popular-priced restaurant, with physical equipment second and management third. He is speaking, of course, from a somewhat different standpoint than ours. I should be inclined to put management first. Emerson says that the man who can make a better mouse trap than anyone else will be found out, even if he is in the depths of a forest, but most people cannot take the time to hunt your tea room up, even though you serve the best meal if you are on the second floor or in a basement room. Try to get on the street level.

Good Food Is First Consideration

5. An interior decorator will be helpful, especially to the beginner. I have in mind a resort tea room, conducted for the benefit of a college fund which owed much of its popularity to a clever decorator who transformed an ugly cottage into a chic little tea room. But remember no matter how attractive the dining room is, your patrons come to you primarily for food, and their return depends on how well you satisfy them in this respect.

6. As to equipment, my advice would be: "Buy cautiously." If you visit a store devoted to the equipment of restaurants, you will be told that you *must* have this or that, but wait and see for yourself. Buy only essentials (and these of the best) and add other equipment when you find it needed, bearing in mind that it is better to have a balance in the bank than a bill on some one's

books. Don't over-buy in the beginning. The stores will always be there.

7. Perhaps one of the greatest assets in this business is an open mind and a willingness to learn.

8. The young woman who is anxious to start a tea room often says: "I believe I could do it, if only I could learn about the buying of food." My reply to this is that, while it is important to purchase properly, it is still more important to merchandise your food successfully, after it is purchased. It is well always to buy the best, but the great art is to sell to the best advantage. Overhead, that is, wages, replacements, rents, heat and light, must come out of the proceeds of the food you sell and you must know how to gauge the cost of the portions you serve.

For instance, a twelve-pound turkey should serve twenty-four people. The foods that go with such a dinner must also be properly proportioned and you must know the cost of these portions if you are to know what profit you will make. This holds good in all food sold. How many portions are there in so many pounds of this or that? Proper portioning is a very essential thing.

In my tea room I do my own buying, and we have a daily cost system of expenditures and receipts, the average being made from this. In the matter of table linen we have effected a saving, although we give fresh linen with each service. We use a square just the size of the table.

Choice of Personnel

9. The kitchen is, of course, the heart of the establishment, and success must emanate from that point. The ideal kitchen is sunny and well-ventilated. In my establishment, owing to the ten-hour law effective in all restaurants, I have to find a way to live up to that requirement. I have a group of women who come on duty at five o'clock in the afternoon, replacing three others, whose time expires at that hour. These fresh workers go on with the dish washing and later clean the kitchen and dining room, which are thoroughly scrubbed every night so that they are spotless for the workers to enter next morning. I find there is a psychological effect on those who work in the kitchen if they can come into a clean, sweet-smelling place in the morning. My kitchen is not perfect in its arrangements because the building was not planned for the purpose but it is as well planned as is possible under the circumstances. If I were building, I could make it more compact. A small kitchen is a labor-saver.

My office adjoins the kitchen, and here supplies are kept and requisitions and menus made out. My employes are: a forewoman who, with the help of a porter, receives and weighs all supplies as they come in, and issues them as they are needed. She also supervises the serving of the food to the dining room; (b) three cooks, besides the pastry-cook; (c) three dishwashers, who, because a dishwashing machine is used, also help in preparing vegetables; (d) two laundresses (we have our laundry done on the premises as it saves carrying a heavy stock of linen); (e) fourteen waitresses; (f) two cashiers; (g) a head waiter.

I prefer women for waiting on table as it promotes the home atmosphere, but I have had both men and women for superintending the work and have been equally satisfied with both. At present, I have a man for head waiter.

*Read at the annual meeting of the American Dietetic Association, Chicago, October 24-27, 1921.

Between 600 and 700 people are served daily in the tea room.

We have said that the kitchen is the heart of the place, but its efficiency would be much impaired without a well-ordered dining room, where the food is appetizingly served. A maxim often repeated in our tea room is: Food well-cooked and intelligently placed before the guest is sold. By intelligent service I mean service by women quick in action, neat in appearance and quiet in deportment.

Welfare of Workers

Much more thought is now being given, and rightly, to the welfare of the helpers when they are off duty. We have a restroom in which they can lie down and rest or read when they have time.

It is well to carry liability insurance for the staff of workers, and this is usually done by the group insurance plan which we employ in our tea room. However, that protection should not relax your vigilance on behalf of the welfare of your assistants for whom you are responsible.

Start the day right. It is always well to be on hand before your helpers arrive in the morning or to be represented there by some reliable person whom you have trained in your methods. I believe in keeping my assistants and I never wait for them to ask for an increase in salary.

The young woman who wishes to learn the tea room business may well enter the employ of some one who has been successful and learn his or her methods. Thus she will avoid costly mistakes.

There are many difficulties in the business of serving food. I have recently heard of a hotel proprietor in a large summer resort who said that she had not had a complaint during the entire season. I could only conclude that she had some tactful assistants who kept these complaints from her knowledge. Perfection is our goal, but we can hardly expect to attain it on earth.

In my tea room we do have complaints, and they are always welcomed. I say to my helpers: "Don't tell me the compliments you hear about the service here. They will take care of themselves. I want the complaints." All complaints are carefully considered, and I have found the method of calling all together who might be concerned and presenting the complaint to them as I have received it more effective than taking the matter up with the individual.

These are some of the problems of the administration of a tea room—the difficulties. But there are compensations:

1. You form friendships with highminded people whom you meet from day to day.
2. You have the satisfaction of feeling that you are filling a definite place in the community.
3. You have the joy of achieving a big thing, and it seems to pay for everything when your patrons come to you and say: "This is really wonderful. How do you do it?"
4. The successful tea room means financial independence for its owner.

Here are a few "don'ts" for the managers of tea rooms.

1. Don't fail to look into the ice box in making up your daily menu. "Left-overs" have a direct relation to "turn-over."
2. Don't be too penurious with your cook. Food must be well cooked in order to sell well and to cook it well, one must use generous amounts of butter and cream, and other expensive ingredients that go to make a perfect dish. Yet, while we advocate generosity, waste cannot be tolerated. You have not only a right, but a responsibility,

to know all that is going on in your business. Here genius in administration is almost a necessity, but when this knowledge is thoroughly acquired, much trouble and friction are avoided. Remember, it is your right to investigate every detail of your business in spite of temperamental spirits in the kitchen. In fact, it is the only way in which you can find the real value of the individual employee.

3. Don't fail to keep in mind the requirements of your guests. In my tea room, the popular thing is a table d'hôte service, offering a three-course luncheon for sixty cents and dinner for a dollar. But some people want a la carte service—a chop, or steak, salad and dessert. I make these work together and merchandise some of the same articles in each branch of the service.

4. Don't forget to have frequent conferences with your workers. These should be as often as weekly, sometimes daily. If you find one girl is not doing her work as you like, you can frequently correct this in a conference, not mentioning her specifically but stressing the importance of doing such and such a task in the right way. The great pleasure in work comes from doing it a little better than the average, and the best service we can render our assistants is to exact the best from them and reward accordingly. It has been my experience that if the one in charge of any business has an earnest purpose and attacks the work seriously and with deep interest, his or her helpers catch the spirit and work in the same way.

Remember we, the heads of an enterprise, create the atmosphere, and we must take the consequences. It is reflected in our place. Our assistants absorb it. They fairly eat it up. It radiates to our patrons and is just as sincere, serene, tense, generous, penurious, particular, improvident, careful, careless, slovenly or capable, as is our thinking regarding our enterprise.

Like any other force, it cannot rise higher than its source. Sometimes we are so engrossed with building a business that we fail to perceive that we are building something infinitely more difficult to undo when we discover a mistake in construction—a character. We cannot administer a business and leave ourselves out of it. I have little patience with those who consider business a feature of living where different ambitions and ethics prevail. Business is living, and there is no better opportunity for displaying our ideals than the enterprise which sustains us.

5. Don't forget that the price of success in this business is hard work, vigilance in detecting and banishing waste, learning to bear heavy responsibilities without breaking under the strain, and willingness to forego most social pleasures in the beginning, until your business is established and your bank account warrants a little letting-up. Your work will be constantly on your mind and the day is long. You cannot take time to form friendships outside your business. But all this does not mean that you must become a one-sided person. Have a hobby that does not take too much time. Keep the play spirit alive, and if you cannot take time to golf, at least you can indulge in a brisk walk or a visit to an art gallery to refresh your soul. It is perspective we need, and when we are too near a situation we find our view is foreshortened.

6. Don't be too intent on money-making to let slip opportunities to set others in the way of progress. Have your helpers an ambition to do greater things? Help them on. No one truly prospers by keeping others back.

7. Don't worry too much over trifles. Keep a light heart, remember that all has worked out well in the past and trust that it will do the same in the days to come.

HOSPITAL EQUIPMENT AND OPERATION

With Special Reference to Laundry, Kitchen and Housekeeping Problems

Conducted by FRANK E. CHAPMAN, Director
Mt. Sinai Hospital, Cleveland, Ohio

HOW TO MAKE GOOD COFFEE

THERE will always be wide variance of opinion as to what constitutes good coffee and what is the best process to follow in its making.

Coffee forms an important part in the hospital dietary and hospital superintendents and dietitians will be greatly interested in the results of a research study conducted by Prof. S. C. Prescott of the department of biology and public health at the Massachusetts Institute of Technology. While Prof. Prescott's findings are not complete, a preliminary report has been issued.

From experiments conducted, it is indicated that a large majority of persons "prefer coffee which has not only been not brought to the boiling point, but which has been prepared at a temperature considerably below this point."

Prof. Prescott's experiments covered the effect upon the flavor of beverage coffee of various metals. His conclusion, based upon actual tests with a number of consumers, is that the majority prefer coffee prepared in a glazed pot, which includes utensils of glass, porcelain, vitrified earthenware or agate ware, and not brought into contact with tin, copper, aluminum, silver or other metal. "It is fairly obvious," he says, "that many of these metallic substances yield pronounced flavors when covered with an organic solution such as coffee infusion. This is particularly pronounced in the case of certain metals, and seems to be most marked with tin, tin-plate and copper."

Method of Preparation

In describing how he prepared the coffee which the majority of his test subjects liked best, Prof. Prescott says: "We find that it is desirable to bring the water to a boil, then remove the source of heat for a moment or two and then add the coffee. This will bring down the actual temperature of reaction to a point below that at which the severe chemical change takes place. Do not start with water at the temperature desired for reaction."

The investigator sums up his conclusions as follows:

"The opinions we have arrived at with reference to the making of good coffee may, therefore, be summarized by the statement that the filtration (or drip) processes yield a clear good coffee if made with fresh materials and with the right conditions of time, temperature and utensils. In our experience the use of those percolation processes in which the ground coffee is constantly subjected to repeated treatment with the hot water, or coffee infusion, yield much less desirable results and are, in fact, far from satisfactory. Long-continued heating processes or those in which the coffee is actually subjected to boiling are even worse in this respect as they bring into solution bitter or astringent substances and drive out of solution the fine aroma which

can only be obtained by retaining the evanescent ethers and volatile oils."

The full text of Professor Prescott's report is as follows:

In the report of a year ago, I attempted to give a resumé of the collected data on the physiological effect of caffeine, the characteristic ingredient of coffee. Neither our investigations nor the published work of other workers has led to any change of opinion in this regard. But caffeine is not the whole of coffee, and there are other ingredients in its composition on which the literature gives us little light, and scientific accuracy demands a much more thorough investigation of coffee as a whole than has yet been made.

During the past year we have been concerned with researches into the composition of the coffee bean after roasting and with the study of the numerous factors bearing upon the preparation of beverage coffee, which we believe have immense practical interest, not only for the coffee roaster but also for the housewife and the ultimate consumer as well. These I propose to discuss one by one, as I think the results will thereby be more clear-cut and convincing than if an attempt is made to generalize too hastily, or to combine too many factors in a single statement of our conclusions. It is perhaps unnecessary to state that we have endeavored to study the whole subject without bias or preconceived desire to prove special pet theories, but to arrive at opinions based on a solid groundwork of observed facts.

Our work for the year may therefore be regarded as having two distinct parts, one purely chemical in character, the other essentially concerned with the practical mechanics of coffee-making.

Further Studies on the Occurrence of Caffein

As I pointed out last year, many determinations of caffeine have been made by different observers, using different methods and arriving at results somewhat at variance. A comparative study of the methods has given us the explanation of some of these results. Study of the roasted coffee, when extracted with various solvents, has given various amounts of caffeine, more or less mixed with other ingredients. Furthermore, unroasted coffee may similarly be shown to present variations, although it is evident that the total amount of caffeine existing either free or combined in coffee is essentially the same before and after roasting.

For example, less caffeine may be removed from medium roasted coffee by use of ether than by chloroform, and similarly the total amount of organic matter dissolved

varies with the solvent. If a sample of coffee be ground, divided, and each portion treated with an organic solvent, each one will give a certain quantity of caffeine, but apparently no one will extract it all. If a portion be subjected to consecutive treatments with solvents suitably selected, each will put out from the ground coffee its own quota of this substance. If, after completing the extraction with a single organic solvent, the residue is boiled with water a further residue of caffeine is obtained. By following out this method carefully we have been able to show that the total amount of caffeine in the coffee which may be removed by all solvents is the same as the quantity which may be obtained by use of boiling water, but none of the solvents will take out as much as water alone. If now we take pure caffeine and study its solubility in the solvents used, we find that all of them will dissolve it readily. We are therefore brought to the important conclusion that caffeine exists in coffee not only in the uncombined or free state, but also in certain combinations which may be removed by the use of our solvents, and especially by boiling water. To what extent the breaking of these combinations is accomplished solely by the action of temperature, is still unknown, but it is evident that this may be the case, as will be discussed later in speaking of beverage coffee. If so, the effect of the high roast may be of very great importance, especially in view of the possibility that these unbroken caffeine compounds may have a very important bearing on the known coffee idiosyncrasy of certain individuals or on the effect on sleeplessness of which some people complain.

Even at temperatures as low as 185 degrees F. a large proportion of the caffeine is removed by water in a short treatment, say two minutes. Our figures indicate that about 80 per cent of the total caffeine is dissolved in this length of time at 100 degrees, and it is possible that nearly as much is removed at the lower temperature. It is therefore of great importance to discover if caffeine-compounds, split up by boiling, yield substances which are prejudicial or objectionable, and a study on this phase of the subject is now being conducted by Dr. Mendenhall, head of the department of physiology at the Boston University Medical School, using certain substances of waxy or oily nature which have been prepared in our laboratory.

Caffeine forms very few additional products with organic substances, and in this respect differs from the alkaloids. It may, however, form compounds with metals and on this point some very important considerations of a practical nature may be based. It has recently been found that caffeine may unite with mercury compounds or salts, giving a characteristic product, and to assume that other metallic compounds are possible is not improbable. The practical side of this will be discussed later.

Leaving caffeine, we may consider briefly other important components of coffee, the oils, waxes and resins and the ethereal compounds which give the delicious aroma to a properly prepared beverage coffee, or to freshly roasted coffee. In our work we have obtained these oils, waxes and resinous substances, but at present have no definite knowledge as to the extent to which these bodies may come from the bean or from the chaff. The oil is small in quantity, yet a very important ingredient from the standpoint of taste and aroma. It is volatile and evanescent, thus explaining why ground coffee goes "off flavor" on standing. By reheating such coffee, it may be temporarily improved in aroma as the heat expels the oil from the inner cells and brings it to the surface. The same result has been obtained by keeping coffee in tightly sealed glass jars where the oil appeared in small drops on the

surface at points of contact with the glass. In open containers this oil would be lost by evaporation. The quantity of oil is so small that large amounts of coffee must be used to obtain sufficient quantity for analysis and identification, yet the minute amount makes a great difference in the aroma of beverage coffee. The quantity in a cup of coffee is so infinitesimal, however, that it can probably not be regarded as having important physiological action. This may not be true of the waxes and resins which occur in much greater quantity, and which are also under investigation in the experimentation of Dr. Mendenhall.

Much has been written of the *caffetannic acid* of coffee, and erroneous ideas have sometimes been fostered as a result. Coffee contains nothing of the *gallotannic acid* type, such as occurs in tea leaves, oak bark, hemlock, etc. In other words, coffee will not *tan*. That there are bitter or astringent principles present in coffee is well known, but the nature of them is not yet known. *These are removed by boiling.*

From the practical standpoint it is at once evident that these findings may have a very considerable bearing upon the process of roasting and that substances which are conceivably objectionable in green or low roast coffees may be broken up or destroyed by the application of high heat and longer roast. In this way it would be possible to account for differences which are said to exist in the coffee used in tropical countries and those which have a more ready demand in the temperate zones and especially in the more northern latitudes. It is also evident that any consideration of this matter opens up a new field for investigation on the whole general subject of the changes which take place during the roasting process. These we hope to be able to study after we have carried the laboratory experimentation to a much more advanced stage.

Studies on Beverage Coffee

The original plans of the investigation authorized by your Research Committee called for a study of the factors concerned in the making of beverage coffee, especially the character of the water, temperature of brewing, time of treatment, method of preparation, character of container or pot used. The changes produced by the addition of hot milk, cream and sugar were also regarded as worthy of study.

At the outset it must be emphasized that the individual preference, or taste, plays a very important part in arriving at an opinion on matters of this sort. Some individuals have a keen taste perception, while with others it is not acute. Furthermore, it is likely to be influenced by training, habit or experience, so that those who have long been accustomed to a particular style of cooking or a characteristic method of preparation of any food substance unconsciously tend to select the flavor to which they have been habituated as the most desirable. This fact, combined with the facts that taste, flavor and aroma cannot be made the subject of exact quantitative estimates, makes it necessary to replace the individual opinion by a group opinion or popular vote in arriving at a decision as to what is "best" in the public mind. We have, therefore, in these practical studies on coffee-making attempted in every case to test our individual opinions as to quality by checking it against such a group opinion, or rather by becoming units in such a composite group.

Observations previously made had indicated that the factors of temperature, quantity of coffee used, fineness of grind, character of the coffee-pot, and time of infusing would be most important, and we have therefore carried out many comparative experiments in which one factor

alone was varied, all the others remaining constant, or as nearly so as is humanly possible. By this means direct comparisons are obtained, and conclusions reached absolutely free of individual bias. Some of these conclusions we believe to be of very great importance in the movement for "perfect coffee." With the particular variant known to but one person, a series of coffees is prepared, and while fresh and hot tested and compared by a group of individuals of intelligence and ability to discriminate. No discussion is permitted during the test, the report of preference or quality being designated on a slip of paper which is given into the custody of the coffee maker. When the whole group has reported the individual opinions are tabulated and the popular preference is indicated by the majority vote. While the groups have in general been small, say of ten to twenty individuals, the total number of different persons has been about sixty, and the repetition of the tests has been undertaken as a control measure. It cannot be claimed that a single test of this sort is always conclusive, therefore it is our purpose to make constant repetitions, with much larger numbers, before announcing opinions as final. The results of the tests made have great value, however, as indicating the general trend of opinion as to what constitutes quality in beverage coffee, and as suggesting methods for improvement in coffee-making and increasing the popularity of the beverage.

Effect of Water

While it is most probable that in case of very hard or very alkaline water, the character of water used for coffee-making may have an important effect on the quality of the beverage resulting, our experiments with distilled, hard, medium and soft waters of both ground and surface origin in the New England districts have not given conclusive results. There are so many factors of greater importance in their effect on beverage coffee that we must regard the difference in water in New England, at least, as trivial. With mid-western waters this is probably not the case, and we have been hoping to receive samples of the more difficult types of water supplies for study.

Our results indicate that waters containing considerable amount of alum or of chlorine, as well as waters which are excessively high in alkali might affect the results adversely in the preparation of coffee, but there are many other factors concerned as will shortly be pointed out. One of the most important factors pertaining to the preparation of coffee seems to be the temperature employed to prepare the extract, or in other words, at which the coffee infusion is actually made. Practically every analysis of coffee conducted in the past has been made on an infusion prepared with boiling water. Our experience in the laboratory has brought us to the conclusion that a very deep-seated change takes place when ground coffee is heated with water at a temperature approximating boiling water. If medium or finely ground coffee is added to water at the boiling point, a slight lowering of the temperature takes place, amounting probably to 3 or 4 degrees C. or perhaps 6-8 degrees F. At this temperature there is a marked physical change in the appearance and an action which may be perhaps most easily described as simulating effervescence takes place. Vigorous foaming ensues, gas bubbles are formed and pass off and there is every evidence that a chemical change of complex character takes place. Just what happens cannot be positively stated, although our studies on the determination of caffeine suggest strongly that the compounds of caffeine which occur in the bean may here be undergoing decomposition. It is possible also that changes in the protein substances of the bean are

also brought about. This change seems to occur at a temperature somewhere between 95 and 100 degrees C., or a few degrees below the boiling temperature. If now we make an infusion of coffee at temperatures below this point the chemical action which results is far less vigorous and the resulting coffee infusion retains all the fine flavors, and is freer from certain bitter or astringent flavors than that which is made at the higher temperature. This is important in making coffee.

In order to determine whether this effect of temperature produces a marked change in the quality of beverage coffee, we have carried out an extended series of practical tests, using the groups of individuals as our subjects for determining popular opinion in the way which has been previously described. In general, it may be stated that a fairly large percentage of consumers prefer coffee which has only *not* been brought to the *boiling temperature*, but which has been prepared at temperatures considerably below this point. We have compared, for example, coffee actually made at a temperature of 85 degrees C. (185 degrees F.), coffee made at a temperature of from 90-93 degrees C., about 200 degrees F., coffee made above 95 degrees but below the boiling point, coffee which has been brought to the boiling point, and coffee which has been boiled for brief intervals such as a minute and one and one-half minutes. In a large majority of cases, the preference is for the coffee made at the lower temperatures, whereas coffee made at boiling temperatures, or coffee which has actually boiled for a short time has been looked upon with comparative disfavor. The importance of this to the housewife, the restaurant keeper or hotel is evident. The practical application of this will be worked out.

Critical Temperature in Coffee-Making

Vigorously boiling water has generally been accepted as best. We find that it is desirable to bring the water to boil, then remove source of heat for a moment or two and then add the coffee. This will bring down the actual temperature of the reaction to a point below that at which the severe chemical change takes place. Do not start with water at the temperature desired for reaction.

Now the practical application of that, it seems to me, is just here; it means that if we want to get a coffee which pleases the popular taste, it is very important to have the actual infusion with the coffee made at a temperature a few degrees below the boiling point. We believe that there is what we may call a critical temperature in coffee-making, and that that critical temperature is below the point at which this effervescing effect of which I spoke takes place. When that effervescence takes place, chemical changes go on in the coffee and that permits the solution of more of these astringent or bitter substances which go in the solution.

In the past it has been generally stated that vigorously boiling water should be used in making coffee. We find that it is desirable to bring the water to a boil and take away the source of heat for a moment; if it is on a flame, take it away from the flame for a moment or two; if on steam, turn off the steam for a moment or two and that will bring about a depression of your temperature just a few degrees, just enough to bring it down to that temperature which is desirable.

Rules to Control Temperature

That can be worked out and will be worked out in a practical way, and I believe it will be possible for us soon to develop a set of rules, if you want to call it rules, by which the desired temperature can be absolutely con-

trolled, and there will be no guess-work about it. Of course, I want you to get this matter of temperature straight. I don't mean that you should mix the water at 185 degrees with the coffee, but the point I want to make clear is that the mixture of the water and coffee together should be below the temperature of 200 degrees if you want to get the better quality of coffee, a few degrees below the boiling point. If water is brought to a boil, and then the source of heat is taken away for one or two moments, you will get that lowering of temperature which is desirable and which will prevent the breaking up or the effervescing of the coffee when it is added, giving it more undesirable (I won't say objectionable) substances.

Furthermore, of course, at the lower temperatures you will save a good deal of the aroma-giving substances which are very volatile and which pass off very quickly at the higher temperature.

It has long been known, of course, that coffee not only contains caffeine, but that it contains other substances. The medical men have talked a good deal about caffeine, and very frequently advised their patients to abstain from coffee, apparently forgetting the fact that tea also contains caffeine in just as large amounts, or even larger amounts in some instances, and absolutely the same substances that occur in coffee. It is, however, a fact which can be demonstrated that there are many people who can drink tea with impunity who cannot drink coffee.

It is important from the standpoint of the making of coffee to find out why that is, what substances are in coffee, for example, which may have this effect, not on any great group of individuals, but on the occasional individual. We have undertaken these animal experiments to determine if there are substances which are taken out of coffee in the process of infusion, which do have depressing action upon the heart or kidneys, or any other form of action which might be objectionable, and which may explain the reason why some people cannot drink coffee regularly without undergoing a certain amount of discomfort.

Animal Experimentation Begun

I have therefore obtained Dr. Mendenhall, who is at the head of Pharmacology at Boston University, and an expert in his field, to undertake the physiological side of this experimental work.

I may say that a preliminary report from Dr. Mendenhall states that "the experiments thus far carried on are preliminary in nature and definite conclusions cannot be drawn in the present state of the investigation. However, the results obtained thus far indicate that there is nothing harmful or toxic in nature contained in the products that have been investigated. I can make no further report at this time as to the state of experiments that are under way in which verification of the above indications will be sought, and enough evidence obtained to warrant definite conclusions."

Dr. Mendenhall has not yet been able to test all the different substances which we have prepared for him, but this work is going on as rapidly as it can be pushed and we believe is going to lead to some very important conclusions.

Obviously, the results we have obtained in the study of the preparation of coffee at temperatures below the boiling point open up a relatively new field and may be looked upon with skepticism by those who have been accustomed to the ordinary methods of preparation of beverage coffee. I wish, however, to state emphatically that this phase of the work will be extended and studied with

greatest care in order that no conclusion not warranted by thorough study and multiplicity of experiments will be reached. That the temperature of the water plays a very important part in the character of the resulting beverage is so apparent from the results we have already obtained that I believe there is little danger of erroneous conclusions being drawn.

We shall give to Dr. Mendenhall for experimentation products which have been extracted from coffee at the boiling point, using the method which has been most commonly employed in the past, and also products which we obtain at these lower temperatures, because it is very important to find out whether the substances which may possibly be objectionable are produced in much greater quantity at the boiling point than they are at the lower temperature. Of course, our assumption—if I may call it an assumption—is that they are likely to be increased very much by raising the temperature, that is, we can get more of these bitters and astringents, and possible objectionable substances out by boiling water than we can by water at 200 degrees Fahrenheit. But we want to check up on it absolutely by the animal experimentation.

Time is Also a Factor

The factor of time is also of very great importance. Using a definite quantity of ground coffee, we have prepared extracts at constant temperature in which time of heating has been varied from two minutes to as high as eight hours. In these studies comparison has been made of the specific gravity, the total soluble solids, the reducing power as shown with copper solutions, and the amount of caffeine dissolved have been determined. In these investigations we have tried the following extracts: 5 per cent., 10 per cent., and 20 per cent. That is to say, we have used in each case 5 and 10 or 20 per cent. of the weight of water in ground coffee. The results have shown that two minutes' treatment at the boiling temperature dissolved something over 80 per cent. of the total caffeine; nearly as much is taken out almost instantly, while the long-continued treatments yield slightly higher results in soluble solids, reducing power and caffeine, the figures show conclusively that the desired constituents are almost instantly extracted.

The experiments which I have just described were carried out at 100 degrees C., and we now propose to repeat this work, using lower temperature in order to determine if approximately the same results may be obtained. One of the outstanding results of the whole series of experiments on the time and temperature has been the pronounced deleterious effect upon flavor and aroma in the case of coffee which has been actually boiled even for as short a time as one minute. This is very marked as evident from the opinions expressed.

Another matter which seems to be of immensely greater importance than has been ordinarily supposed is the effect of metals upon the taste or flavor of beverage coffee. The average consumer of coffee in the home is probably accustomed daily to a beverage coffee prepared in a metallic coffee-pot of some sort, either tin-plate, aluminum, copper, nickel, or silver-plate. Another large group, but probably not a majority, has undoubtedly been accustomed to coffee prepared in agate ware or some of the vitrified utensils, which are in reality much like glass or porcelain. These we call "glass" utensils. We have conducted a large number of experiments with reference to the effect upon the taste and flavor of these metals and the results have been of a somewhat surprising character, in that it is evident when we compare

coffee made in glass or some of the vitrified utensils with that made in exactly the same way in contact with metals, there is a pronounced difference in taste which the discriminating observer can in general pick out.

It is a well-known fact, for example, that the metals—aluminum, tin, tin-plate, copper, nickel and silver—are acted upon more or less by organic substances of acid reaction. They vary in the degree in which they may be acted upon, and we find that the differences which we get here correspond very closely to the differences which we get or which have been observed in such things as fruit juices and other organic substances of that sort.

It is fairly obvious that many of these metallic substances yield pronounced flavors when cooked with an organic solution such as coffee infusion. This is particularly pronounced in the case of certain metals, and seems to be most marked with tin, tin-plate and copper. There has long been a tradition that silver produces a distinctive taste in coffee, although we have not checked this by experimentation.

The practical application of this is to get as far as possible from continued contact with metals. There are limitations which we frankly recognize, but we aim to call attention to the direction in which we believe improvement can be made in the future.

In connection with these experiments, in which groups have been used to check up the results obtained by the single observer in the laboratory, it is interesting to note the much greater sharpness with which the opinions are arrived at when cream and sugar are added to the coffee, as compared with the results in the black coffee. This is undoubtedly due to the fact that the great majority of individuals are accustomed to a coffee containing cream or milk and sugar, and that their taste is therefore more trained to distinguish differences than when coffee containing neither cream or sugar is employed. In both cases, however, the results are in strong accord, and if not entirely convincing to all, will at least prove to be suggestive, I think, of certain possibilities in the improvement of coffee-making throughout the country. We have been able to show in the laboratory that even a short contact of a coffee infusion with metals is accompanied by the formation on the metal of a thin deposit which, we believe, is a chemical combination between some ingredient of the coffee and the metal itself. That these organic-metallic combinations may yield marked flavor is well known to chemists and this result should be of great practical value to the coffee dealer who is anxious to increase the sale of coffee by making the beverage a more generally accepted one.

We don't know at all, of course, whether these organic metallic compounds have any physiological effects, but we have no evidence at the present time to show that they do. That is another line along which we shall probably want to carry some experiments, in order to determine absolutely whether this is the case or not.

A few infusions which have been prepared either at different temperatures or in contact with different metals show fairly marked differences of appearance or changes upon standing. Any coffee infusion which has had prolonged heating or heating at a high temperature soon becomes cloudy through the formation therein of a colloidal suspension which cannot be filtered out. Moreover, the change in flavor which results is too well known to need comment. A large part of this change in flavor is undoubtedly due to the loss of volatile oils and others which supply the delicious aroma of the well-prepared beverage, but there is some indication that other changes induced

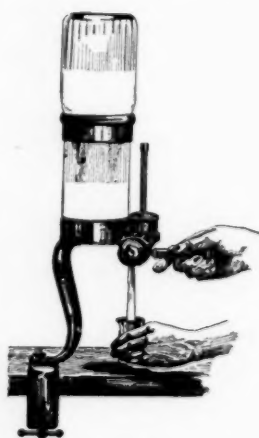
by the separation of this finely divided material may also take place. It is an extremely interesting fact that in the beverage coffees which have been prepared at temperatures approximating 90-94 degrees C. (below 200 degrees F.), that is, below the point at which the marked chemical change I have mentioned is observed, the solution remains much clearer upon standing and shows much less change in taste and aroma. This point is also of importance in the preparation of the so-called perfect cup of coffee. The character of the changes which are brought about here still remains to be thoroughly investigated, but preliminary results are so marked in their character that they indicate in a pronounced manner the importance of the whole study which we have undertaken. I do not wish to appear too critical or to give too great weight to some of these matters. It is the way progress will be made, however.

The opinions we have arrived at with reference to the making of good coffee, may therefore be summarized by the statement that the filtration processes yield a clear good coffee if made with fresh materials and with the right conditions of time temperature and utensil. In our experience, the use of those percolation processes in which the ground coffee is constantly subject to repeated treatment with the hot water, or coffee infusion, yield much less desirable results and are, in fact, far from satisfactory. Long continued heating processes or those in which the coffee is actually subjected to boiling are even worse in this respect, as they bring into solution bitter or astringent substances, and drive out of solution the fine aroma which can only be obtained by retaining the evanescent ethers and volatile oils.

There are many factors which need repeated study, but I believe it will be evident from the statements I have made that a good deal of progress has already been secured in the study of our problems of proper coffee-making. From the purely scientific standpoint, there remain many things to be determined and each new departure from the older type of investigation opens up a new field which may be of very great practical, as well theoretical, importance.

AN ECONOMICAL CREAM DISPENSER

The economical and sanitary dispensing of cream is a



recognized problem in every institution. A manufacturer has recently introduced a new device, simple and compact, that dispenses the cream direct from standard quart bottles. This device accurately measures each portion of cream, is drip-proof and keeps the cream well mixed at all times. The cream is dispensed direct from the bottle just off the ice; it is never touched by hand and is clean and sanitary. Such a device should have a ready sale in the hospital field not only for diet kitchen use but for use

in main service rooms as well.

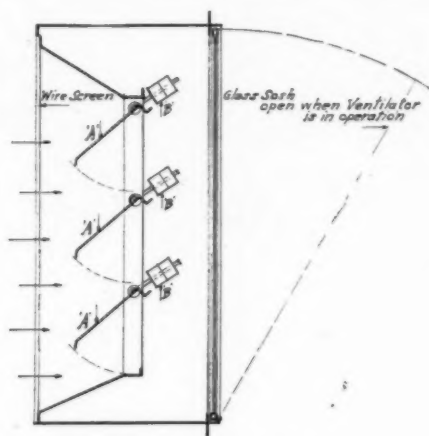
"Life is short, art long, occasion brief, experience fallacious, judgment difficult. It is requisite that the physician exhibit what is essential, and that the patient, attendants, and all which surrounds him, concur therein."

—*Aphorisms of Hippocrates.*

AUTOMATIC VENTILATORS FOR THE HOSPITAL

The problem of proper ventilation in hospitals is a subject that has been given close study by hospital authorities. As a result of this study many authorities believe that better results are obtained without mechanical or forced ventilation and recommend the utilization of open windows. The open, unguarded window, however, has serious drawbacks; among them, the inability to control draft and the necessity of constant vigilance to prevent the entry of rain or snow.

Nor has the study of ventilating problems been confined to hospital authorities; it has received the close



SECTION Box and Wall Type

OPERATION

The aluminum louvers 'A' are freely balanced open, by the adjustable lead weights 'B' which can be adjusted to suit any degree of wind pressure.

Fig. 1.

interest and attention of those in charge of health conditions in schools and public buildings of all sorts. In New York City a recent investigation of school ventilation extended over a period of several months and comparison was made of results obtained in mechanically ventilated and window-ventilated schoolrooms with respect to the health of the occupants. The result of this study is briefly summarized as follows:

"The significance of these two sets of results may be expressed in this manner; for every 100 cases of respiratory illness in the cool window-ventilated rooms, there are 152 in cold window-ventilated rooms, and 231 in fan-ventilated rooms."

To overcome the obvious drawbacks to open-window ventilation, there has recently been designed a special automatic ventilator which in the last analysis is nothing more than an open window automatically guarded against drafts or weather.

This protection is secured by extremely sensitive counter balanced louvers which exclude wind, rain or snow, yet insure a free circulation of fresh air at all times, regardless of outside weather conditions. Once installed the automatic ventilators need no attention or upkeep regardless of weather conditions, it is said.

These new automatic ventilators are manufactured in definite units in any shape or size up to 1,600 square inches for installation in windows of any type, transoms, steel sash or the walls of new structures. They are made of solid copper, finished in any color.

The principles of construction of the new automatic ventilator is well shown in the sectional cut (Fig. 1). As will be seen, there are a number of louvers, made of aluminum, each with an individual counter balance. These counter-balanced weights hold the louvers open under normal conditions, but close automatically when the wind pressure is strong enough to cause a draft or to drive in rain or snow.

While automatic ventilation is thus secured, further regulation is possible. The counter weights which control the sensitiveness of the louvers are threaded on an extension of the shaft, bent at right angles and secured in position on the principle of a locknut. When the counterweights are placed near the axis of the shaft, the louvers

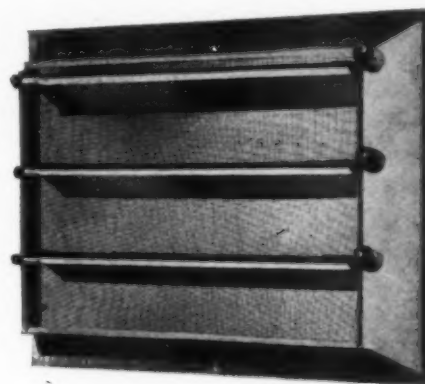


Fig. 2.

will close with the slightest wind pressure. As the counterweights are moved toward the end of the shaft, the resistance to the wind is correspondingly increased. The fact that the louvers are not only made of aluminum, but are mounted in self-aligning dust-proof ballbearings, immersed in oil, insures their action under all conditions.

The single insert standard box type and window type automatic ventilators has an opening 7x9 inches and are suitable for installation in walls, window openings or for general use in building construction. The frame is made of heavy gauge, pure copper, with a heavy copper screen on the outside which prevents insects, dust, etc. from entering.

Fig. 2 shows the inside view of the unit, enabling com-

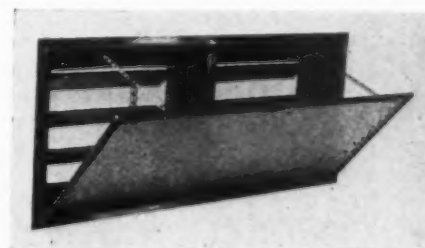


Fig. 3.

parison with the detailed drawing of construction shown in (Fig. 1).

To meet other requirements, the ventilator is also made in the form of multiple inserts, these being fitted with two to four units, giving a ventilating opening of from 126 to 252 square inches.

Fig. 3 shows one of the multiple insert ventilators, containing two units. This illustration also shows the glass door, which is, as a rule, provided on the inside of the ventilating units. This door is hinged at the bottom, flush with the inside wall and is valuable for deflecting the air upwards. This door can be adjusted to any desired angle or completely closed.

One of the common methods of installation of the automatic ventilator is at the top of the window attached to the frame outside of the sash as shown in (Fig. 4), this

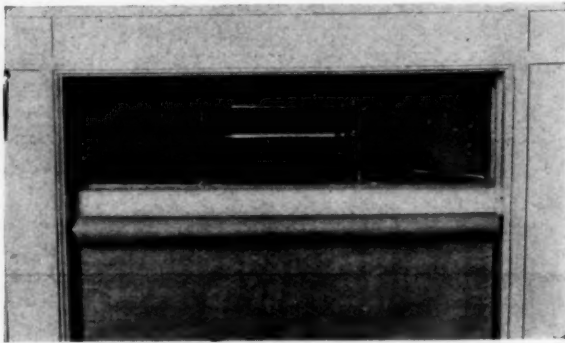


Fig. 4.

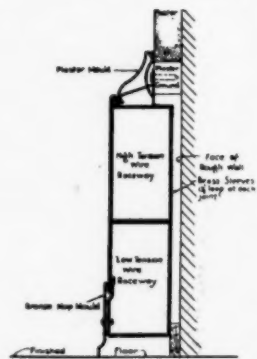
being a view of an installation from the inside. In this case a single unit has been employed, the space on either side being filled in with glass panels. One of the valuable features of this form of installation is that it permits the customary use of the window shade. The shade does not at any time obstruct ventilation, nor does the incoming air cause the shade to flap.

A NEW SOLUTION OF WIRING PROBLEMS

Electrical wiring problems in hospitals have always been serious. No matter how carefully planned a new institution may be, there frequently arise new needs for special outlets, service plugs, special call systems and possible high tension current for x-ray purposes. In the ordinary method of conduit wiring it is an expensive and tedious task to make comprehensive changes in wirings

or connections. Likewise in established hospitals where changes are desired or new circuits needed, the superintendent is confronted with the expensive difficult task of conduit wiring through walls, or the unsightly exposure of open wiring contained in conduits.

To meet these wiring needs for both old and new buildings there has recently been designed a special metal base board containing two raceways for electric wiring. This metal base

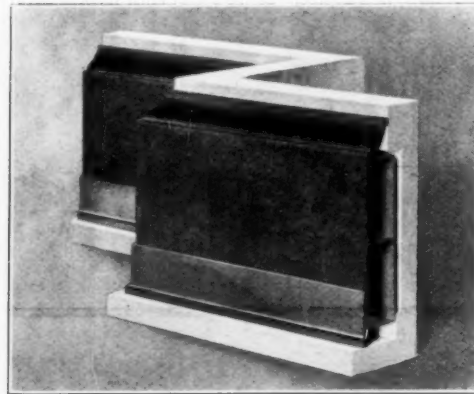


board as will be seen from the illustration takes the place of the ordinary base board and provides readily accessible channels for carrying service wires. By removing several screws the entire face or front of the base is removed exposing the two channels in which can be carried all service wires. As a rule one of the channels or open conduits is designed for high tension and the other for low tension wires.

One of the most valued features of this device is for the installation of special x-ray laboratories or other pur-

poses where high tension current is needed which can not be readily supplied from the existing electric circuits. For such purposes is of great assistance in the remodeling or replanning of existing buildings. Another valuable use of this special base is for the inclusion of a signal system wiring; it enables changes to be made in existing outlets and gives a flexibility to the system that is not possible under ordinary conditions.

This new device offers a sanitary metal base, finished



to match any wood, marble or metal, and provided with a natural bronze mop mould. For wiring purposes it provides large concealed metal raceways immediately and easily accessible at any point for inspection or new connections. Any number of outlets can be readily installed and connected at any desired point.

When this new conduit base is employed, it is possible to make as many changes in wiring connections and outlets as may be desired. The photograph shows the finished appearance of this new metal base, while the zinc etching shows the detailed cross section.

CONVENIENT CHART BINDER

The increased importance of case record maintenance has resulted in numerous new devices adding to convenience in handling and filing various record forms. The accompanying illustration shows a new chart binder which



is not only cheap and durable but enables the hospital to combine individual records readily.

The various sheets pertaining to one patient (history, physical, clinical, pathological, laboratory, x-ray, continuation, etc.) are assembled in their proper order and fastened with a small hand stapling machine into a complete unit. The unit is then fastened in the binder by means of a gummed slip, and the whole presents a neat and finished appearance.

One of the great advantages of this system is that upon readmission of patients, the completion of additional

records in the out-patient department, or in follow-up work, additional sheets can likewise be stapled together, attached by a similar gummed binding slip and securely bound within the same covers.

This method of preserving case records was devised by the Presbyterian Hospital of New York and has been found to insure not only the safety and preservation of the records but ready accessibility and ease of reference.

A SMALL SIZED MIXING MACHINE

Many of the smaller hospitals are still using laborious hand methods in kitchen operations simply because most of the mixing machines on the market have been too large and complete for their requirements, while, on the other hand, household size equipment is not suitable for their work. Recognizing this condition one of the established manufacturers of mixing machines has recently introduced a new and practical outfit which meets the requirements of the smaller hospital.

This machine may be electrically operated from any lighting current and is equipped with a 10-qt. bowl, whip and beater. The little machine will perform a complete line of kitchen duties, including the mixing of all doughs,



beating of eggs, batter, etc., mashing potatoes and other vegetables, whipping cream and icings, as well as straining soup, sauces and purees.

In addition there is an auxiliary drive which can be attached to a meat and food grinder, vegetable slicer, coffee mill and similar equipment that can be obtained at a moderate additional cost.

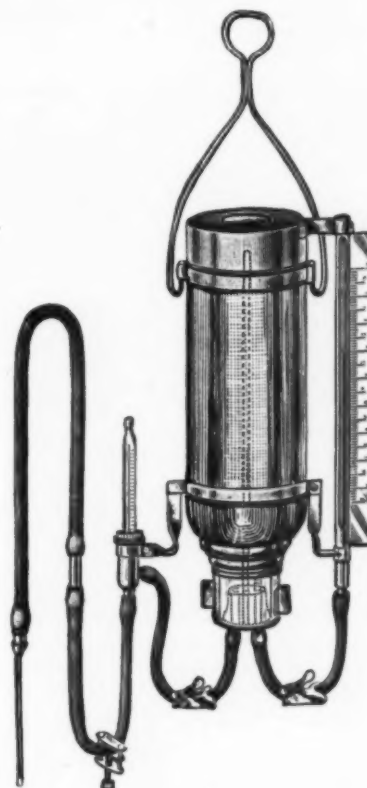
The construction of the new mixing machine is thoroughly substantial and workmanlike. It is finished in baked white enamel, and so is easy to keep clean. The machine is said to be quiet-running; beaters and bowls can be easily and readily removed. A centralized control is provided so that speed can be changed and the machine started and stopped by the use of one lever.

FOR ADMINISTERING FLUIDS

Recent improvements have been made in a device for the clinical administration of fluids which are apparently most practical. A device of this kind has a wide range of usefulness in institutions, it being applicable for the intravenous administration of fluids, hypodermoclysis, proctoclysis, duodenal and intestinal feeding and therapy,

transduodenal lavage, and the administration of irrigating fluids, Dakin's solution, etc.

One of the outstanding features of the equipment is the use of a non-breakable vacuum bottle which contains the fluid and conserves its temperature. The entire outfit is readily sterilizable and is practically indestructible with the exception of the thermometer and a small piece of



glass tubing in the gauge. With this outfit it is possible to register not only the exact temperature of the escaping fluid but, by means of a simple gauge, the exact amount of fluid and the exact rate of flow.

One of the outlet tubes is connected to the glass gauge, indicating at all times the exact amount contained in the vacuum bottle in terms of cubic centimeters and enabling the amount of fluid administered to be determined accurately at all times. Through another outlet tube the fluid is carried to a chamber holding the thermometer bulb. The thermometer registering Fahrenheit indicates at all times the exact temperature of the escaping fluid. Simple cut-off clamps give positive control over the escaping fluid. The flow of the fluid through the needle is further regulated by a special screw clamp. For intestinal feeding and therapy, a drip bulb is inserted in the tubing which, in turn, is connected to a special intestinal tube to which is attached a gold plated capsule-shape bucket.

This device was originally designed by Dr. J. Buckstein of New York.

"The south wind produces thickness of hearing, dimness of sight, heaviness of head, and is, on the whole, oppressive and relaxing; such are the effects in sickness, during the prevalence of such winds. That from the north, brings with it coughs, sore throats, dysuria, constipation, shiverings, and pains of the side and breast; these are the symptoms which take place in sickness when this wind holds dominion."—*Aphorisms of Hippocrates*.

OCCUPATIONAL THERAPY AND REHABILITATION

Conducted by HERBERT J. HALL, M.D., President, American Occupational Therapy Association,
Devereux Mansion, Marblehead, Mass., and MRS. CARL HENRY DAVIS,
Advisor in Occupational Therapy, 825 Lake Drive, Milwaukee, Wis.
Co-Editors: LORING T. SWAIM, M.D., 372 Marlboro St., Boston Mass., and
MISS MARY E. P. LOWNEY, Room 272, State House, Boston, Mass.

PLACE OF PHYSICAL REHABILITATION IN THE NEW INDUSTRIAL REHABILITATION WORK

BY OSCAR M. SULLIVAN, DIRECTOR OF REEDUCATION, MINNEAPOLIS, MINN.

THE rehabilitation of a disabled person is an activity that has many phases. This is made manifest by the diverse state systems that were created before the Federal act was passed and began exerting its influence in the direction of standardization. Some of the state systems tended to emphasize the physical side, others the educational side and still others the social welfare side. It is possible to maintain a good theoretical argument that any one of these phases should be the dominant one. However, at the present time the advantage from the pragmatic standpoint is with the system that gives first place to the educational side, for the reason that the Federal law is an educational one and necessarily leads to the development of this field.

Physical Side Cannot Be Slighted

But even with the educators in charge of the work, it is not likely that the importance of physical rehabilitation will be or can be slighted. It is obvious that if a disabled person can by proper medical and hospital treatment be physically rehabilitated, this should be done rather than to let the handicap remain and undertake a vocational rehabilitation. It is also evident that until everything has been done to put the disabled person in the best physical condition, any steps for vocational rehabilitation may be premature and unwise. It seems, therefore, that while the new state systems of vocational education and placement for disabled persons are necessarily an educational and social welfare activity they must secure the most complete possible interrelation with the work of physical restoration.

In the opinion of not a few who are engaged in the work, a physical examination of every applicant for vocational rehabilitation is essential, first in order to determine the extent of the handicap, and second, in order to determine whether any physical restoration is possible, and if not, whether the applicant is physically able to perform the duties of the occupation chosen for him. Those who wish to keep the rehabilitation work as free from needless routine and formality as possible do not agree that an examination should be made in every case but admit that it is necessary in a large number of cases.

If physical rehabilitation then, is not the direct charge of the state vocational rehabilitation system, whose concern is it? This cannot be answered without making an

analysis of the various classes that are covered by rehabilitation. The movement as it is now being conducted in this country cares for some widely divergent groups. The first demand for the work was made on behalf of the persons disabled by injuries within the scope of the workmen's compensation acts. It was soon seen, however, that if it was worth while for the state to establish machinery for reclaiming any group of disabled citizens, it would be sound public policy to use the same machinery for all who were handicapped. As a result the present scope of the system includes victims of all other industrial accidents, of non-industrial accidents and of disease. The great variety of cases must make it very doubtful to anyone whether a single solution of the problem of physical care can be found.

Let us consider the workmen's compensation cases first. Here one is on firmer ground. Surely, with the progress that has been made by this admirable social insurance plan throughout the country, no one would advocate a new system for physical rehabilitation in the compensation cases. It is true that the care given and the standard fixed by many state laws is very inadequate, but the remedy lies in perfecting the system, not in replacing it with a new one. Every state compensation law should provide full medical, surgical and hospital care necessary to cure and relieve from the effects of the injury. It should include proper prosthesis as a part of such care. It should set up such efficient state supervision of the medical care given under the act that the best results would be attained. If there were a reasonably complete medical report filed on each compensation case and reviewed by a competent medical officer of the administrative body, the benefit from the suggestions alone that could be made as to improved treatment should be very great, to say nothing of such steps as clothing the administrative body with power to step in and order a change in treatment in cases where it seemed necessary.

Large Number of Impairments

The statistics that any state can disclose of the large percentage of permanent partial disabilities that are made up of impairments instead of dismemberments would suggest to that layman that here is a place where a big improvement could be made. Illustrating this by the Minnesota statistics which are at hand, I find that out of 1,176 permanent partial compensation cases closed in

the year ending June 30, 1920, 613 were cases of loss of function compared with 563 that were dismemberments. The dismemberments include amputation at any time after the injury, and it is possible that even in this group there are some that can be saved by improved methods.

Difficulty in Making Uniform Plan

In the absence of effective state control much could be done by voluntary action on the part of the insurance companies. It is not meant to be implied that any of these are not now giving a very high grade of medical care, but it is felt that this is a field where the insurance companies might well be at competition to show which can render the best service. At the San Francisco meeting of the International Association of Industrial Accident Boards and Commissions, a representative of the insurance companies expressed the thought that they should have a place in the rehabilitation movement and that this place should be given them by such changes in the laws as would make it possible for them to reduce compensation if they effected rehabilitation. The writer opposed this view, holding that reduction of compensation in such cases would penalize the injured man and would be a deterrent to rehabilitation. He offered as an alternative the suggestion given above, that the insurance companies had their place in rehabilitation because they have so much to do with the physical restoration of the injured man. Their incentive to do well in this field should be that of service and the time should come when an employer would pick an insurance company because of its reputation for giving the best service in rendering the injured man physically fit.

When one turns to the non-compensable disability cases the difficulty of a uniform plan for the entire group continues. This group can be divided into a large number of classes none of whom have any features in common. One of the important classes is made up of the injured railroad employees. Adjustment is usually made with these on the basis not of a workman's compensation law, but of a modified liability law. The question of negligence continues and in many cases no financial relief is received. As a rule, railroad companies cooperate in maintaining benefit fund systems for their employees, and medical and hospital care is a feature of such systems. It is clear again that in dealing with these cases the state rehabilitation system can act in an advisory capacity only. Nor is the problem any simpler in the other classes which are covered by the group under consideration. Some of these classes are farm accident cases, traffic accident cases, tuberculous cases, disease cases of various kinds and congenital cases.

Advisory Relation Is Wiser Plan

While it is possible that a state which would create a system for physical rehabilitation in conjunction with or subsidiary to the vocational rehabilitation system and with the design of serving as a catch-all for such cases for whom no other provision existed, would find that it could accomplish much good, it would also discover that it required very careful management in order to keep it from interfering with the growth of other specialized provisions which have more warrant for existence. There are so many difficulties to be encountered in setting up standards as to where private medicine ends and public medicine begins that it would seem to be the part of caution to approach this aspect of rehabilitation slowly.

On the whole, therefore, it would appear that sound policy dictates an advisory relation to physical rehabili-

tation upon the part of the vocational rehabilitation system rather than a relation of direct management. It should be the function of the vocational rehabilitation system to understand all the existing provisions for physical care and bring the injured person in touch with the proper agency for treatment or prosthesis at the proper time. In other words it should make itself a center of influence with respect to physical rehabilitation. It should place itself in a position to know what should be done and also as far as possible, bring the right forces into action. Only in exceptional instances will its own direct work be also therapeutic. At times, there will be cases where the disabled person will begin a course of vocational training at some stage of his convalescence and the course will serve at the same time as occupational therapy. In the great majority of cases occurring in civil life, however, the disabled person is likely to postpone his entrance upon a course of training until he is beyond the need of medical treatment and until various factors affecting his future plans, such as compensation, damages, maintenance funds, or the like, are definitely determined.

The relation just outlined for the rehabilitation system will not be found to be a narrow one. It has not been so found in Minnesota. It offers scope for abundant activity, much accomplishment, and the gradual development of policies which will eventually fill the gaps in the provisions that now exist.

"SUNDRY CITIZENS" SEEK HOSPITAL FOR THEIR "DISTEMPER'D"

Before hospital provision was made for their own families, the early colonists in America maintained at public expense places for the care of sick strangers. In Pennsylvania this practice of caring for the stranger sick is evidenced in a petition presented to the provincial assembly in 1751 in which "sundry citizens" seek a hospital for their own use:

"The kind Care our Assemblies have heretofore taken for the Relief of sick and distempered Strangers, by providing a Place for their Reception and Accommodation, leave us no Room to doubt their showing an equal tender Concern for the inhabitants. And we hope they will be of Opinion with us, that a small Provincial Hospital, erected and put under proper Regulations in the Care of Persons to be appointed by this House, or otherwise, as they shall think meet, with power to receive and supply the charitable Benefactions of good People towards enlarging and supporting the same, and some other Provisions in a Law for the Purposes above mentioned, will be a good Work, acceptable to God and to all the good People they represent."

As to the indigent sick, the petition declares:

"That the good Laws of this Province have made many compassionate and charitable Provisions for the Relief of the Poor, yet something farther seems wanting in favour of such whose Poverty is made more miserable by the additional Weight of grievous Disease, from which they might easily be relieved."

As to the care of persons "distemper'd in Mind and depriv'd of their rational Faculties," the petition speaks:

"Some of them are going at large, a Terror to their Neighbors, who are daily apprehensive of the Violences they may commit; And others are continually wasting their Substance, to the great injury of themselves and Families, ill-disposed Persons wickedly taking Advantage of their unhappy Condition and drawing them into unreasonable Bargains."

SUGGEST CONSTITUTIONAL CHANGES IN AMERICAN OCCUPATIONAL THERAPY ASSOCIATION

THE House of Delegates and Board of Management of the American Occupational Therapy Association met at the office of the New York Society on February 22 to discuss certain proposed changes in the temporary constitution adopted last October at Baltimore.

It was not expected that there would be a large attendance of the House of Delegates, which is a widely scattered body, so a number of active members of the Association in and about New York were invited that there might be a free expression of opinion to guide the two bodies in their deliberations and actions at some future meeting.

Of the Board of Management there were present: Mrs. Cornelius Sullivan, Mrs. Carl Henry Davis and Dr. H. J. Hall. There were present from New York, Mrs. Eleanor Clarke Slagle, secretary-treasurer; Miss Marion Taber, chairman of the committee on finance; Miss Susan Johnson, chairman of the committee on education; Mrs. Clyde Myres; Miss Meta Rupp, director of the New York Society; from Philadelphia, Miss Florence Fulton; from Boston, Miss Harriet Robeson, director of the Massachusetts Society for Occupational Therapy; from Washington, Miss Marian Morriss, superintendent of Aides in the Public Health Service; from Albany, Dr. Horatio M. Pollock, statistician, New York State Hospital Commission.

Dr. Hall, the chairman, made it clear in the beginning that while the Board of Management was present with power to act for the society, there were not enough members of the House of Delegates present to allow of any proper functioning of that body.

By far the most important matter under discussion was that of certain criticisms in regard to the personnel of the new House of Delegates. According to the constitution adopted at Baltimore last year, the House of Delegates in which rests the responsibility of electing officers and of advising the Board of Managers is made up of members of state societies wherever they may exist in different parts of the country—one member for every twenty-five in the local societies. While the old Board of Management believed that this would mean a fair representation, subsequent developments have shown that several important constituencies of the Association were

left out, and could, according to the constitution, have no direct voice in the affairs of the Association. Among these bodies without representation was the very active and important group of O. T. workers in Pennsylvania where no state society exists. It appeared also, that there were large numbers of Aides working under the Veterans' Bureau and other government divisions—young women in active service desiring expression in the American Association—but having no place in the House of Delegates according to the constitution. The opinion has also been expressed that there should be a considerable

number of delegates-at-large made up from active members of the Association working in isolated places where no state societies exist. Another suggestion that a Board of Management consisting of only two members with the president might be too small a number to be truly representative of the Association.

The sense of this meeting, without a dissenting voice, was that the House of Delegates should be very considerably enlarged; the recommendation being that appointments should be made not only from the existing state societies but from any duly organized group of O. T. workers. Also the feeling was that there should be representation in the House of Delegates from such groups as those working together under the United States Public Health Service, Veterans' Bureau and the National Soldiers' Homes, and that the representation be in the ratio of one to ten rather than one to twenty-five, since several of the organizations are so small as to allow of no representation

on the old basis. Attention was called to the fact that by such an arrangement the Veterans' Bureau Aides would have a disproportionately large number of representatives in the House of Delegates. To offset such a difficulty the suggestion was made that after a representation of six had been allowed any one group, there should be no further representation except in the ratio of one to 100 members. Members of these groups, who were also members of state or other local societies, could of course be counted in one group only. Unless the House of Delegates should become too large for easy functioning, it was suggested that delegates-at-large be appointed in the ratio of one for every three or four regular group delegates.

DISCUSS JOINT MEETING WITH A. H. A.

ALTHOUGH the House of Delegates chose Boston as the next meeting place for the A.O.T.A., there has been some disappointment expressed by the middle western groups because it has now been three years since an annual meeting was held in that section. Travel expense is high and many who would like to attend these meetings cannot take the long journey to the east.

Since the vote for Boston was cast, there has been suggested the possibility of meeting with the American Hospital Association at Atlantic City September 25-29. Atlantic City is a long way from Chicago and Milwaukee, but if we make this fusion we shall be able to share with the larger association the benefits of greatly reduced railroad fares and of a joint meeting place.

There are many other reasons why it would be desirable to accept this offer if all the arrangements can be perfected. O.T. is a definite hospital function. Not only would the hospital executives have a chance to become familiar with our work, but we could with great advantage attend some of their meetings.

The House of Delegates has been asked to reconsider the vote for Boston, and it is hoped that they will agree on Atlantic City as a desirable compromise. Announcement of the result of the second ballot will be made in THE MODERN HOSPITAL next month.



Passing Fads in the Manufacture of Dentifrices

Not a Medicated Dentifrice. Years ago Colgate & Company refused to meet the artificial demands for a highly medicated dentifrice. They followed scientific dentists in the contention that drugs are harmful to the mucous membrane of the mouth. Such drugs should not be used in a dentifrice except in the treatment of pathological conditions, and then only under the advice of a dental practitioner.

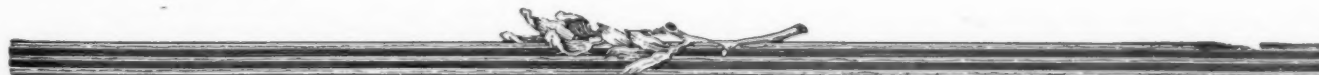
Not an Acid Dentifrice. Once more Colgate & Company's stand is with the scientific members of the medical and dental profession who refuse to use an acid tooth paste. They recommend to their patients a dentifrice with high cleansing qualities, pleasant to taste, containing a thorough non-gritty cleanser.

A generous supply of samples will be sent to professional friends, post-paid, on request.

Welfare Dept.,
COLGATE & CO.
Established 1806
New York, N. Y.



*Cleans teeth
the right way.*



These points were, of course, only suggestions. It remains for the House of Delegates and the Board of Management to decide whether they shall be proposed as amendments to the constitution at the next annual meeting.

Suggest Membership Amendment

The discussion brought forward the information that many members of state societies and other local groups were not members of the A. O. T. A., nor could they be expected to pay the membership fee of two organizations. It was suggested that membership in a local organization might also constitute membership in the A. O. T. A. and that the local organizations might well raise their membership fees slightly and contribute to the support of the American Association. This is a matter which will no doubt be brought up for discussion in the fall meeting. Mrs. Slagle was asked to make a survey of the situation, and to find out how many members of the local organizations are also members of the A. O. T. A., and how many active members of the A. O. T. A. are not members of any local organization.

The next most important subject was that of an office for the secretary-treasurer, a place where the clerical work of the Association could be done, where records could be kept, where all inquiries could be forwarded, and where a central registration office for aides and directors throughout the country could be provided. Although it was difficult to see where the money could be raised for such an office, the general agreement was that without it the A. O. T. A. could not function intelligently or comprehensively. The sense of the meeting was that such an office should be provided. Mrs. Slagle said that a suitable location was available with several other national organizations, a cooperative plan which would reduce the expense to \$30 a month for the office itself and possibly \$20 for clerk hire. The Board of Managers had already voted to authorize Mrs. Slagle to secure this office, and she was requested to get from all the schools and state societies a full record including a list of available aides and positions open. It was suggested that she might with advantage ask the local societies and schools to make no appointments or placements without notifying her, and that she should keep them informed of any placements made through the central office.

Would Meet with A. H. A.

The annual meeting place for the A. O. T. A. was brought up for discussion. Mrs. Davis from Milwaukee made it clear that the middle-western section, representing a very large and important group, felt that it was not quite fair to have the next meeting in the East as had been voted by the House of Delegates with only a very small margin in favor of Boston. As a compromise and for various other advantages, it was suggested that the A. O. T. A. might meet with the American Hospital Association wherever that large organization might choose to have its annual meetings. Occupational Therapy is distinctly a hospital function and it is understood that the American Hospital Association would be glad to have the meetings held with them. The A. H. A. will have its next meeting at Atlantic City, and while this is a long way from the Middle West, it would be possible through affiliation with the Hospital Association to secure greatly reduced railroad fares and hotel accommodations, so that many, who would be debarred from going to Boston on account of expense, would find it perfectly possible to go to Atlantic City. The meeting voted to suggest to the House of Delegates that they reconsider their de-

cision. Such a reconsideration can, of course, be made by mail ballot within the next few months. Ideas and suggestions on this point from any member of the society will be very gladly received by the president and will be passed on by him to the House of Delegates.

The question of a graduate summer school at Byrdcliffe, N. Y. was considered. Every one agreed that such a school was desirable, but the meeting was distinctly unfavorable to the assumption of any financial or other responsibility on the part of the A. O. T. A. The suggestion was made that the various existing O. T. schools might well conduct summer courses for graduates, thereby reducing travel and other expense for members wishing to take such courses.

Appoints Legislative Committee

Certain matters pertaining to pending legislation in New York state were discussed, very important matters concerning provisions for O. T. work in public institutions, and in regard to the purchase and sale of articles manufactured under the O. T. system. The president was asked to appoint a committee on legislation for the A. O. T. A. Miss Taber, Mrs. Slagle and Miss Robeson were appointed.

Miss Johnson reported that the New York State Society had been at work on the matter of obtaining from physicians and aides definite statements of their clinical successes and failures, so that there might be on record an increasing mass of data concerning the actual progress of the system. She stated that this work was already going on, and the idea was commended by the meeting.

Dr. Hall expressed the feeling that in the future the state and local societies would be growing more and more important and more active in initiative and that unless they had very full representation in the House of Delegates of the A. O. T. A. there would be a tendency to withdrawal of support from that organization. He felt that from now on the future effectiveness of the A. O. T. A. depended upon the influx of power and support from the local organizations. Until recently the A. O. T. A., formerly the National Society, had been the only important directing center but that now the situation was different and that the A. O. T. A. must make itself more sensitive to the needs and requirements of local organizations; that the A. O. T. A., now it was to have a central office, could fulfil a function heretofore impossible; that its usefulness, so far from being impaired by a fuller representation in the House of Delegates, would be greatly increased and developed.

COMMENTS ON THE NEW YORK MEETING

To Dr. Herbert J. Hall:

"Regarding the representation, it seems to me that it would be much wiser to go back to the old plan if the House of Delegates is to be increased and make every member a member of it. I certainly have no objection to increasing the Board of Management, but believe that the society must reconcile itself to the fact that it will be controlled by a minority of the Board, if business is to be transacted at meetings. By all means let us do any thing that will promote good feeling."

(Signed),

W. R. DUNTON, JR.

Towson, Md.

To Dr. Herbert J. Hall:

"I thank you for the minutes of the meeting recently held in New York City. After reading the discussion relative to the House of Delegates, I am inclined to think

The Endocrines, Digestive Ferments, Catgut Ligatures, etc.

THE ARMOUR LABORATORY is maintained for the purpose of handling the glands, membranes and other raw materials supplied by our abattoirs in immense quantities, from which important therapeutic agents are extracted and fabricated.

Among the products that the physicians and surgeons use daily are:

Corpus Luteum; Suprarenals, U. S. P.; Parathyroids; Pituitary, Whole Gland; Pituitary, Anterior; Pituitary, Posterior; and other glandular substances in po. and tabs. Pituitary Liquid in 1 c. c. and $\frac{1}{2}$ c. c. ampoules.



Suprarenalin Solution 1:1000; Suprarenalin Ointment 1:1000; Pepsin, U. S. P.; Pancreatin, U. S. P.; and other preparations of the Digestive Ferments that are used in stomachic and intestinal disorders and as vehicles for nauseating drugs.

We also make Sterile Surgical Catgut Ligatures, plain and chromic, boilable; and Iodized Ligatures, nonboilable. ¶ The Armour ligatures are made from Lambs' guts, selected especially for surgical purposes and sterilized at opportune stages in such manner as to preclude the possibility of contamination in the finished strings.

We are headquarters for the Organotherapeutic Agents and are always glad to co-operate with the medical profession

ARMOUR AND COMPANY

CHICAGO, U. S. A.

How are you cutting your gauze and bandages?

Have you tried a Universal Gauze and Bandage Cutter?

It will save 90% of your time for cutting, releasing your nurses for more important duties.

Let us know your current and voltage, and we will ship you a machine on ten days trial by prepaid express.



UNIVERSAL CUTTER COMPANY

SCOTT AND EUCLID AVES., ST. LOUIS, MO.

NEW YORK
PHILADELPHIA

CLEVELAND
BALTIMORE

CHICAGO
SAN FRANCISCO

Over 100 Hospitals are using these machines today

that little good will be derived from the House of Delegates as a body. In other words, I believe that it was a mistake to establish this intermediate body between the individual members and the National Society. I believe that an executive committee of nine members, three to be chosen each year to act with the officers in the general management of the Association, would function far better than a House of Delegates. I fear that the national organization will lose many of its members if control is continued in an intermediate body and individual members are not given any part in the management of the Association unless they also belong to a state organization.

"I mention these things not to criticize the present constitution, but rather for your consideration when the matter of amending the constitution is taken up."

(Signed),

HORATIO M. POLLOCK, Statistitian,
State Hospital Commission,
Albany, N. Y.

CONDITIONS GOVERNING JOINT MEETING WITH HOSPITAL ASSOCIATION

Relative to the proposed joint meeting of the American Occupational Therapy Association with the American Hospital Association at Atlantic City, N. J., Sept. 25-29, Dr. Herbert J. Hall, president of the A. O. T. A., received the following letter from Dr. A. R. Warner, executive secretary of the A. H. A.:

"This office has now secured the necessary information, all of which is favorable to the joint meeting, and at the recent meeting of our trustees I was authorized to complete arrangements for a meeting of the American Occupational Therapy Association in conjunction with the Atlantic City meeting of the American Hospital Association, provided that the details could be satisfactorily arranged.

"The following details occur to me as fixed:

"1. The American Hospital Association should receive from you a list of the firms manufacturing equipment and supplies connected with the practice of occupational therapy, especially in hospitals. The American Hospital Association will solicit these for commercial exhibits to the end that they shall become a part of the general Exposition of the week. The receipt from the sale of this space will become the property of the American Hospital Association.

"2. The American Hospital Association would furnish without charge to the American Occupational Therapy Association a reasonable amount of space for the exhibit of crafts work, the same being interpreted as a minimum of 800 square feet and such additional amount as it can provide without additional expense to itself. The idea is that these exhibits would be permitted to expand into any space not sold and as the Pier was constructed for exposition purposes all space is good and about equally so. If additional space were required for this purpose, the same would be made available at cost to us, which is 20c per square foot. It is my personal opinion, however, that the purchase of space for this purpose would not be necessary.

"3. We will have three meeting halls on the Pier available for the entire week. The American Hospital Association will use all of these halls for about a day and a half and at other times will be using only the one large hall for general sessions. In so far as there were no conflicts with our meetings—and our skeleton program will soon be determined so that this may be determined exactly—these halls will be available for your use without expense. Knowing that there would be conflict in this matter I took the matter up with the Atlantic City Hotel Men's Association and the following is a paragraph from a letter signed by Mr. A. T. Bell, chairman of the convention committee:

"The hotels will be glad to furnish without additional expense suitable meeting rooms so far as they are available. I am enclosing a list of heated halls which are all of course equally available unheated and which cover what I think will be ample to take care of the meetings which you have in mind."

"Of the list of halls submitted fifteen are in hotels and therefore available to you without expense. Several of these are in hotels just across the street from the Pier, so I see no reason why there should be any expense to you whatever for meeting halls.

"4. It will be necessary for your delegates for the purchase of reduced fare tickets to have certificates made out in the name of the American Hospital Association. This has been required in the past notwithstanding that some of the delegates were traveling at least in part to attend the meetings of the American Conference on Hospital Service, the Protestant Hospital Association and the American Association of Hospital Social Workers, which have in the past met with us and will do so again this year. These will be furnished to you at cost to us which last year was \$20 a thousand.

"5. It will be necessary for your delegates to register in the hotels as attending the conference of the American Hospital Association, as here again it will not be possible to subdivide hotel certificates. The hotel will then provide the guests so registering with a certificate of attendance on this meeting. This certificate will admit the holder thereof to the Pier without payment of the usual admission fee (50c). The general registration will be conducted by the Atlantic City Convention Bureau to which these hotel certificates should be presented and in return the holders will receive an official badge, which will admit them without charge to the Pier throughout the rest of the week. In addition to this some clerk either from your or-

ganization or the Hospital Association, or perhaps others, will finally interview the registrant, collecting dues, etc.

"6. It is likely that the program of the American Hospital Association will be distributed in the form of reprints of the Hospital Supplement of THE MODERN HOSPITAL. Your program could be included in this, making it unnecessary for you to publish additional programs unless you especially desired to do so.

"The above is all based upon our fundamental contract with the convention bureau of Atlantic City. Atlantic City desires conventions, but has no municipally owned facilities to offer. The convention bureau, therefore, makes a cash contribution to conventions based upon the number of people brought to Atlantic City by the convention and this is determined by the hotel certificates presented at the registration. The Million Dollar Pier will give the American Hospital Association a minimum rental of \$7,500 to which will be added charges for additional space, extra facilities, etc. The additional attendance which your group will bring to Atlantic City will, therefore, increase the contribution to the American Hospital Association a certain amount, which cannot be accurately determined and the additional expense to the American Hospital Association cannot be accurately determined. We propose, therefore, to assume that the volume of your attendance and the added interest from your exhibits will compensate the American Hospital Association for the general expense incurred.

"I can see it as no detriment to you to have your registration, headquarters, exhibits and part of your meeting on the Pier and the remainder scheduled in the hotels across the street. Some of the smaller group meetings of the Hospital Association will do so.

"It will not be possible for you to name any hotel as your headquarters. You will be supplied with a required number of the folders similar to the enclosed, to send out to your members (together with other literature concerning Atlantic City). The rates of these hotels will be guaranteed by the convention bureau against increase over the printed list and these hotels will be provided during the convention week with the hotel certificates for your convention. All members must make their own choice from the hotels on this list.

"The American Hospital Association can no longer consider a hotel type of convention and in the future all of our meetings will be in buildings especially adapted to conventions and expositions. It is the general opinion, therefore, that our meetings will rapidly assume the type of the congress of meetings and I can therefore assure you that the addition of your group at this time without any obligations on your part as to future decisions will be very acceptable to the American Hospital Association."

RELATION OF SUPERINTENDENT AND TRUSTEE

The board of trustees must have confidence in the competency and executive ability of the hospital superintendent. Its members must deal with him as the medium of transmission to the internal organism; they must go to him as a source of information about the entire running of the institution; and he, in turn, must be honest with them in giving them true and accurate reports. When downtown, as well as at the hospital, trustees must play the game towards their hospital superintendent. There must be no intrigue and double-crossing. Gossip reacting against the institution should be combatted by the trustees from their knowledge of the hospital or referred to the superintendent if it deals with topics on which they are not informed. The politician trustee is apt to be a menace to hospital progress, and his policies lead to the disruption of real service. There should exist between superintendent and board member a mutual confidence, trust and honesty in all dealings.

BEN FRANKLIN, HOSPITAL TRUSTEE, HAD TO ATTEND BOARD MEETING

Hospital boards of trustees in the twentieth century may take a tip from the first board of the Pennsylvania Hospital which in 1754 passed the following rule:

"Resolved to meet hereafter on the First Fifth-day of the week in every month at five in the afternoon, and that each Manager absent at such Meetings should pay two shillings and those not coming in due time should pay one shilling; the Fines to be disposed as the Majority shall direct."

Benjamin Franklin was elected president of the Board of Managers of Pennsylvania Hospital shortly after the adoption of this rule but history does not record that he ever had to pay a fine.

"Without theory, practice must be a blind doing of what somebody else—tradition, authority or accident—has directed."—Moore.

"America's Most Famous Dessert"



*Institutional Size
makes one gallon*

*Packed in
Two Sizes*



*Domestic Size
makes one pint*

These two products are exactly the same except in size. The INSTITUTION that specifies **JELL-O** is assured of serving its patrons with exactly the same quality of jelly that they are accustomed to in their homes. Ask any good housekeeper what jelly powder she always insists on having

The Genesee Pure Food Company
Two Factories

Le Roy N. Y.

Bridgeburg, Ont.

DISPENSARIES AND OUT-PATIENT DEPARTMENTS

Conducted by MICHAEL M. DAVIS, JR., Ph.D., Executive Secretary Committee on Dispensary Development, United Hospital Fund of New York, and Chief, Service Bureau on Dispensaries and Community Relations of Hospitals, American Hospital Association, 15 W. 43rd Street, New York
and by ALEC N. THOMSON, M.D., Director of Medical Activities, American Social Hygiene Association
370 Seventh Avenue, New York

MEDICAL DISPENSARIES

By GEORGE DOCK, M.D., PROFESSOR OF MEDICINE, WASHINGTON UNIVERSITY, ST. LOUIS.

MEDICAL dispensaries are making history at so rapid a rate that it is difficult to recognize the true proportions and tendencies. I shall try to show you some of their most important developments and set forth some of their problems, medical as well as social. You should all be familiar with the fundamental chapter on the out-patient department by Dr. Louis H. Burlingham in the work on *Hospital Management*, edited by Charlotte A. Aikens, Saunders, 1911, and with the articles and notes in the monthly periodical, *THE MODERN HOSPITAL*, Chicago.

In the indispensable work of Davis and Warner, *Dispensaries; Their Management and Development*, you will find that the medical dispensary is supposed to have taken its origin in London after the great fire of 1665. So many people were impoverished that the physicians of London voted that all members of the organized profession should give their services without charge. I have no doubt that the real origin might be traced farther back, for out-patient services probably originated at many times in the past just as they do now from the in-patient departments of hospitals. Patients who are discharged are often advised to come back for further observation. This always builds up a service that has to be organized, and is sometimes cared for by hospital physicians, sometimes by a separate staff. Somewhat later medical dispensaries were organized by physicians for various other reasons. Some did this to gain personal experience more rapidly; others for teaching medical students. In the early days of the profession in North America, young men worked and studied with practicing physicians. The latter, sometimes as individuals, sometimes in groups, founded dispensaries in which their apprentices, as they were called, gained additional experience. As medical schools were formed and obtained students, they naturally adopted and developed the same system.

Another object in opening dispensaries is financial, either for the profit of the promoters or the assistance of people not quite in the usual dispensary class. This is becoming conspicuous at the present time and deserves more discussion than I can now give.

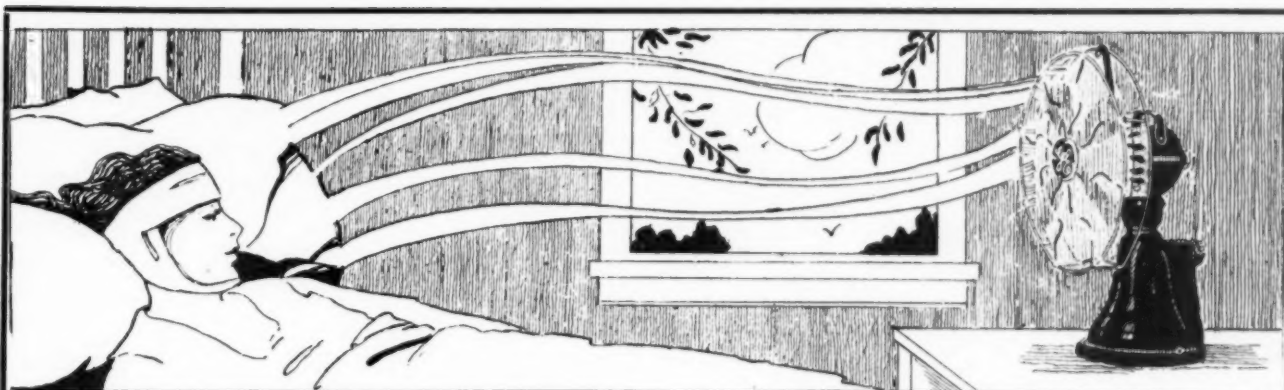
Finally there is a cause for the formation of out-patient departments related to improvement of public health.

We have then four different causes for the formation of medical dispensaries; charity; needs of medical teaching; public health requirements; and financial gain. Two or more of these motives may be combined in the formation of a medical dispensary.

A natural development of the out-patient department

is the subdivision of services according to the specialization of medical study and practice. Even at an early time there were special kinds of dispensaries, particularly those for patients with skin diseases and eye diseases. It was soon recognized that sick persons are likely to have many associated diseases or that the whole body needs consideration, and in recent times the tendency has been to develop all sorts of services in the same building or group of buildings in order better to treat patients. The subdivisions may be more or less refined according to the size of the service and the size of the staff. Among the most important recent additions are services for diabetics, for patients with heart disease, tuberculosis, diseases of the ductless glands, joint diseases, and even such specialties as conditions due to protein poisons, including asthma, hay fever and hives. In surgery we have the natural subdivisions of orthopedics, accident, brain and nervous system, gynecology, plastic surgery, and surgery of teeth and mouth; while other services attend to such things as the saving-baby movement, prenatal care of expectant mothers, control of fecundity, mental hygiene, venereal diseases and many departments for treatment, especially such things as x-rays, radium, mechano-therapy, hydro-therapy and gymnastics. Playgrounds and public bathing places could be closely associated with out-patient departments with advantages to all concerned.

The addition of public health problems to dispensaries has caused a certain amount of alarm in the minds of some people, they fear the encroachment of the state in medical practice. This seems to depend on a wrong idea. What we need is greater efficiency in looking after all problems of disease. Our public health service is less complete than that of many other advanced countries. It does not seem to make much difference what we call the thing, the fact is clear that the public should take a greater interest in the formation and maintenance of out-patient departments than it now does. Some of those who object to the participation by the state, i.e., by the public in general, think that money should always be obtained from rich people who should see that the necessary hands, not to say brains, are provided. This touches a very important point at the present time. It is probable that most money formerly given to charitable medical purposes did not come from so-called rich people, but rather from a large number of people who, while not rich, were in fairly comfortable circumstances. Since the great rise of prices following the war and the enormous taxation to cover the cost of past and future wars, this so-called



It is essential that you have an adequate means of furnishing cool air and ventilation during the heated season

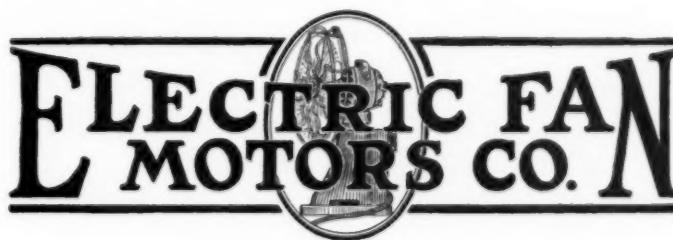
INVEST your money in a fan equipment, which is up-to-date, convenient, and durable.

Since the introduction of the Taxifan, there has been no other such systematic, economical and profitable means of fan service adaptable to public use.

A distinctive mark of the Taxifan is its cash register. You are able to accurately account for all receipts.

The Taxifan is manufactured and guaranteed by the General Electric Company.

You will be allowed extended terms of payment.



Exclusive Distributors
MEMPHIS, TENN.

middle class has practically no money to give for purposes of philanthropy. The rich are beginning to feel the drain on their resources and many of them are taking the ground that all such matters should be carried out by the whole population. In other words, even without any thought of socializing medicine, we may have to face the alternative of dropping a large part of medical work altogether or having it cared for at the public expense, which could best be done through taxation. There is a detail in regard to this that may be worth considering. Some people who gave to so-called charity in the past thought they were giving a practical answer to the question: "Am I my brother's keeper?" This is a very narrow way of looking at the matter, for in a very real sense our brother is our keeper. Abel may not ask our protection; may not ask us not to injure him, but he threatens us with tuberculosis, gonorrhea and syphilis, with malaria, with whooping cough and diphtheria. Therefore not charity but self-protection should give a very strong motive for organized medical work.

In regard to patients whose diseases come from vice we have the new idea of preventive medicine, even if we cannot apply the principles of Jesus—"neither do I condemn thee; go and sin no more." Alcoholism and venereal diseases are social diseases. They cannot be left to the good will or the carelessness of the patient because others are likely to be exposed to violence, to neglect or to infection. They must be combated by the combined efforts of physicians, social workers and efficient public health administration, with a thoroughness we are fairly able to formulate but that we rarely perform.

Competition with Physicians

There has always been more or less complaint about dispensaries taking away patients who should go to doctors. In this connection of course the basic idea is that the patients in question should pay the doctors. If physicians wish to treat the poor free that would seem to be an individual matter and easy to arrange. A young doctor, for example, who wishes to gain experience in this way has only to speak to ministers with poor congregations, social service agencies or overworked doctors in order to get all the material he can use. On the other hand, it seems to be a principle that sick people do not set up a fund on which the medical profession can draw. The sick man may not think of asking a doctor for help. Of course it cannot be considered proper in general for a dispensary to take patients who could just as well be looked after by practicing physicians, but this is a complicated question, and only to be settled in each case on its merits. In many cases the public health feature enters. Everything that is necessary to prevent the spread of disease seems to require the intervention of some other agency than the patient and the physician in his private capacity. Of course the latter may be for the time being a health officer, but that is accidental.

Cases Referred for Diagnosis

A legitimate function of out-patient departments is the examination and diagnostic study of obscure cases. Such patients must be referred from time to time by physicians who are perfectly competent to carry on the usual treatment but may not be able to perform the necessary diagnostic operations. In such cases the out-patient department should work in cooperation with the physician. This sort of work should be more and more cultivated. The patient may need to be seen at his home; the dispensary attendants cannot do this as well as a neighboring physician, and so there should be cordial relations between out-

patient physicians and practitioners, in which the social service worker or local nurse would have important functions.

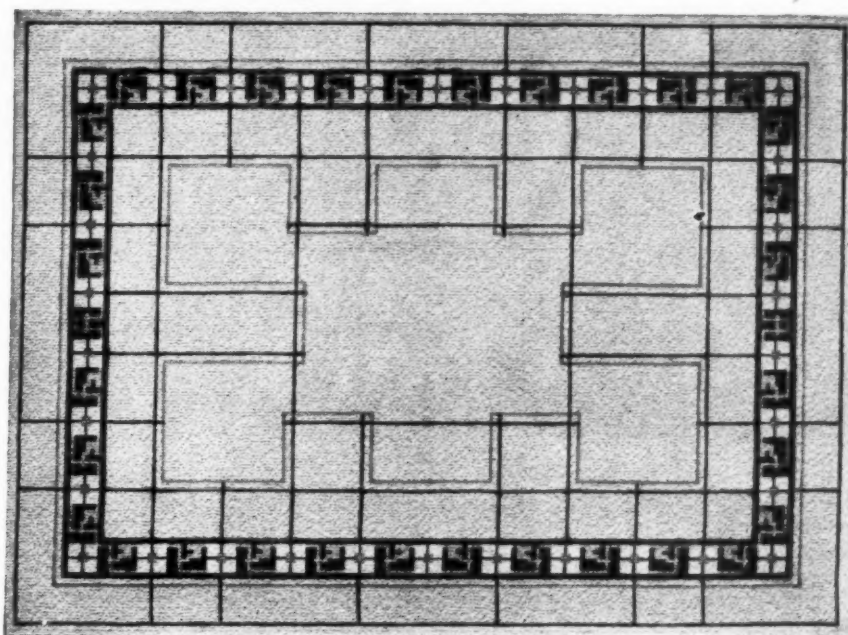
Ethical problems of various kinds constantly come up in the practice of medicine whether in private practice or in out-patient departments. The basis of medical ethics is the Golden Rule, but certain details might be discussed with advantage. It has long been a tradition of the medical profession that knowledge acquired in the practice of medicine shall not be divulged. This has been carried so far that doctors have been put on the same basis as priests in the confessional by courts of law. In other words, they have not been obliged to divulge things told them by a patient. This, however, is changing owing to a number of modifications in the knowledge of disease. Some of the points are obvious. Doctors and others who work with sick people should not discuss their knowledge of findings except to those who have an imperative right to that knowledge. No one should state to outsiders that a patient has a definite disease or condition, even if the matter is perfectly harmless and simple. Often such statements would do no harm, for example, if we say that a given person has influenza or pneumonia, but the habit of talking about such matters is distinctly dangerous.

Legal Requirements Necessary

There are nevertheless, certain legal requirements that must be obeyed. One may not say to an acquaintance that A, B, or C has smallpox, syphilis or meningitis, but in most localities one must send this information to certain officials. This does not really break the rule of professional secrecy, because the records are private and the officials are under obligations to maintain secrecy. Only those who have a right to the knowledge can inspect the records. Many people take an entirely wrong view of this rule and object, for example, to being reported as having tuberculosis and in that way hinder the treatment and public health care of tuberculosis patients.

An allied subject is the matter of telling the truth to patients. In general only truthful statements should be given to patients. In nearly all cases where the patient is of reasoning age and reasonable mentality, the actual conditions should be explained as clearly as possible, but the important question of Pilate is exemplified every day in medical practice; viz., What is truth? It may seem truthful to tell a patient that he has consumption, but on the other hand, the patient's idea of consumption may be entirely different from that of the person who gives the information. So with cancer and almost any other disease. In order to be really truthful one must find out the patient's knowledge of such words as are used and then give the most accurate idea possible. Much harm is done by premature statements that are supposed to be truthful but are not. So for example, a doctor may tell the patient, or the family, one day that the disease is influenza, another day typhoid, another day pneumonia and another day tuberculosis. He is perfectly honest each time and may pride himself on his honesty with the patient, but absolute honesty requires each time that he should say he does not know what is the matter, that in such cases nobody can know at a certain time; that certain possibilities are evidently present and in the meantime he is doing everything necessary for the welfare of the patient. This also should include the welfare of the public, so that if one thinks a patient has a communicable disease, but is not sure, absolute truth requires that he admit his ignorance and at the same time call in someone who may know better, and especially in such a case, a health officer.

FOR EVERY FLOOR EVERYWHERE



World's New Wonder Rugs *At Unheard of Prices For Fine Floor Coverings*

KIMLARK FEATURES

Kimlark Rugs are:

Sanitary—

Can be washed with soap and water

Waterproof—

Not affected by moisture

Odorless—

Having no odor whether wet or dry

Fireproof—

Tests prove it impossible to ignite them

Noiseless—

and soft to walk on. No slivers or harshness

Durable—

Give long wear under hardest usage

**WRITE FOR
PARTICULARS**

The new, sanitary, beautiful Kimlark Rugs are the most modern and economical floor coverings for hospitals. They are woven by a secret process which produces rugs unequaled for wearing quality, softness and utility.

Kimlark Rugs are three-ply thickness, so closely woven that dirt cannot sift through. They are easily washed, fireproof, fadeless, odorless, noiseless and comfortable.

Beautiful, rich designs in brilliant colors on plain and variegated grounds on one side with the reverse side finished plain. Two rugs in one. This means double wear at single cost.

Kimlark Rugs are suitable for every floor covering purpose. Special designs and sizes can be furnished, if desired.

The beauty, long wear, and low price of Kimlark Rugs places within reach of every hospital a long-needed perfect floor covering at moderate cost.

Write for color card and prices.

Manufactured only by

NATIONAL FIBER TEXTILE COMPANY

Chicago

Mills: Neenah, Wis.

New York

KIMLARK RUGS

The Label on the Back Identifies the Genuine

When using advertisements see Classified Index, also refer to YEAR BOOK.

MEETINGS, CONVENTIONS AND CONFERENCES

AMERICAN HOSPITAL ASSOCIATION'S EXPOSITION COMMITTEES AT WORK

HOSPITAL workers who gather in Atlantic City Sept. 25-29 at the sessions of the American Hospital Association convention will see an Exposition of greater educational appeal than has been put on at any previous session, according to plans now in progress.

Inspection of each division of exhibits by committees already named will take place and reports on their findings will be given by committee chairmen before the convention. Committee members will study equipment and materials in their respective divisions and will be prepared to give information and advice to all delegates.

Work has already begun by the committees, their first step being an exhaustive study of the market in their particular field. No firm will be invited to participate in the Exposition unless it is included in the list submitted by one or more of these committees.

Chairman of the various committees appointed by the president are: Construction, equipment and maintenance, Dr. S. S. Goldwater, director of Mount Sinai Hospital, New York; general furnishings and supplies, Dr. Harold W. Hersey, superintendent of New Haven Hospital, New Haven, Conn.; clinical and scientific equipment and supplies, Dr. A. B. Denison, assistant director of Lakeside Hospital, Cleveland; foods and equipment for food service, Dr. C. W. Munger, superintendent of Blodgett Memorial Hospital, Grand Rapids, Mich.; laundry equipment and supplies, Dr. W. P. Morrill, superintendent of Shreveport Charity Hospital, Shreveport, La.

Reports of these committee chairmen when they are submitted to the convention will present something tangible and definite for superintendents to place before their trustees, it is thought. Their reports will tell the story of the most modern and best materials and equipment obtainable next autumn.

The exhibits will be classed for the convenience of the convention and for the purposes of committee investigation and report into the following general divisions with their appropriate subdivisions.

- (1) Building—Construction, equipment and maintenance.
 - (a) Materials and specialties.
 - (b) Floorings.
 - (c) Paints and finishings.
 - (d) Power and heating equipment.
 - (e) Lighting systems and fixtures.
 - (f) Plumbing and waste disposal systems and equipment.
 - (g) Signal systems.
 - (h) Ventilating systems and devices.
 - (i) Elevators, dumbwaiters and ash hoists.
 - (j) Ambulances.
- (2) General furnishings and supplies.
 - (a) Furniture—wood or general.
 - (b) Floor coverings—carpets, rugs and linoleum.
 - (c) Curtains, draperies, awnings and screens.
 - (d) Linens—table and bed—blankets and spreads.

- (e) Beds and mattresses.
 - (f) Uniforms and other garments.
 - (g) Office equipment, forms, printing and administrative supplies.
 - (h) Cleaning equipment and supplies.
 - (i) Miscellaneous supplies.
- (3) Clinical and scientific equipment and supplies.
 - (a) Furniture—steel and special.
 - (b) Surgical and scientific instruments.
 - (c) Medical, surgical and nursing supplies.
 - (d) Sterilizing equipment.
 - (e) Therapeutic equipment.
 - (f) Laboratory and x-ray equipment and supplies.
 - (g) Drugs and pharmaceuticals.
- (4) Foods and equipment for food service.
 - (a) Food stuffs.
 - (b) Equipment for refrigeration and storage.
 - (c) Equipment used in food preparation.
 - (d) Equipment for transportation and serving of cooked foods.
 - (e) Dish washing equipment.
- (5) Laundry equipment and supplies.
 - (a) Water softening and purification.
 - (b) Linen marking.
 - (c) Sterilization of infected mattresses and linen.
 - (d) Washing, drying and ironing equipment.
 - (e) Laundry supplies.

The reports of these committees will be made by the chairmen before a general session not later than the second day of the convention.

HOPE TO FORM TRI-STATE ASSOCIATION

The Wisconsin Hospital Association will hold its convention at LaCrosse on May 31 and June 1, it is announced. Invitation has been extended by the board of directors to all hospital workers in Iowa and Minnesota. Out of this meeting it is hoped that some plan can be devised whereby the three states may meet jointly once a year. If the plan is carried out as conceived by Wisconsin hospital workers, the three states will unite in a single organization and apply to the American Hospital Association for recognition as a geographical section.

Provision has been made at LaCrosse for the entertainment of the convention and the committee is preparing an interesting program. The Rev. H. L. Fritschel of Milwaukee is president of the Wisconsin association and H. K. Thurston of Madison is executive secretary.

The tentative program follows:

Morning Session (May 31. 10 a. m.)

Address of welcome by the Mayor.

President's report.

Reports of executive secretary and treasurer.

Reports of standing committees.

Address by Dr. A. R. Warner, executive secretary of the American Hospital Association, Chicago.

Afternoon Session (2 p. m.)

"The Standardization of Hospitals of 50 to 100 Beds,"



Comparative condition of Softwood and Maple floors at the end of 18 years' service

A Contrast in Cleanliness



Why MAPLE outwears STONE

Every shoe in the thousands that strike a stone sill, grinds off its toll of fine particles in an unchanging friction. But Maple builds up its own resistance to wear, because each passing foot increases the polish on this hard-fibred, tight-grained wood, making it smoother and smoother. That is why Maple surpasses all other woods and all other materials for flooring.

MFMA The letters **MFMA** on Maple, Beech or Birch flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing rules which economically conserve every particle of this remarkable wood. This trademark is for your protection. Look for it on the flooring you use.

THIS illustration is chosen to show you the extremes of flooring woods. It shows Maple alongside a softwood floor—both subject to the same wear. But this difference between Maple and all other woods exists to a degree down through the entire list. Maple—tough-fibred, close of grain—makes a smooth, tight, long-wearing floor that provides no lodging place for dirt and disease germs.

For this reason, Maple is chosen as the standard floor for hospitals. In corridors, entrances, and wards, where it is used bare, it can be scrubbed to spotless cleanliness. In private rooms it can be varnished or waxed to give a subdued, quiet beauty in distinct harmony with the hospital atmosphere.

In MFMA Maple flooring you get Northern Maple—the slow-growth, climate-hardened wood from Michigan and Wisconsin, the source of the world's finest Maple for floors. Maple and its kindred woods, Beech and Birch, are made and guaranteed according to the strict manufacturing rules and standards of the Maple Flooring Manufacturers Association.

Your architect will advise you in the selection of these three widely used woods for floors. Local retail lumber dealers can show you the grades of MFMA flooring suited to hospital use.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1065 Stock Exchange Building, Chicago

Floor *with* Maple

When using advertisements see Classified Index, also refer to YEAR BOOK.

Dr. Frederick W. Slobe, American College of Surgeons, Chicago.

"The community Hospital," Dr. F. E. Sampson, Creston, Iowa.

"The Laboratory in its Relation to the Hospital," by a representative of the Mayo Clinic, Rochester, Minn.

Discussion lead by Dr. Thalheimer, Milwaukee, Wis.

Business session.

In the evening there will be a meeting of citizens at the Congregational Church, where an address by Prof. Kickhaefer of the University of Wisconsin will be given.

Morning Session (June 1, 9:30 a. m.)

"The Laws of Wisconsin Relating to the Nurses' Registration, Miss Eldrige, directress of nurses, State of Wisconsin.

Round table conducted by Mr. Asa S. Bacon, superintendent of Presbyterian Hospital, Chicago.

The final session will consist of papers and discussion.

Business session, election of officers, etc.

of the following topics:

"The Organization of the Medical Staff."

"The Relation of the Hospital Administration to the Medical Staff."

"The Relation of the Superintendent of the Hospital and the Superintendent of Nurses."

OHIO ASSOCIATION MEMBERS WILL GATHER AT DAYTON

The Ohio Hospital Association will hold its eighth annual meeting at the Miami Hotel in Dayton on May 9-11. An elaborate program is being arranged for the three-day convention, consisting of addresses, symposiums and round table discussions.

Dr. C. D. Selby, state chairman of the committee on hospitals of the American Medical Association, will deliver one of the principal addresses on "The Hospital and the Medical Profession." Dr. Willard C. Rappleye, chairman of the committee on the training of hospital executives of the Rockefeller Foundation, has a place on the program, along with Dr. A. R. Warner, executive secretary of the American Hospital Association.

A noon symposium on building and equipment promises to be a profitable part of the program. The order of events for the convention is as follows:

Tuesday, May 9

- 10:00 a. m. Registration.
Meeting of Committees.
Inspection of commercial exhibits.
- 2:00 p. m. Address of welcome—Hon. Frank B. Hale, Mayor, City of Dayton.
President's address—Dr. A. C. Bachmeyer, superintendent, Cincinnati General Hospital.
- 2:45 "The Program of the American Hospital Association"—Dr. A. R. Warner, executive secretary, American Hospital Association.
- 3:00 Round table—Dr. A. C. Bachmeyer, chairman.
- 3:00-4:00 Dietary.
- 4:00-5:00 Housekeeping and laundry.
Note: Members are requested to submit questions for discussion.
Inspection of commercial exhibits.
- 8:00 "The Problem of the Crippled Child in Ohio"—Edgar F. Allen, president, Ohio Society for Crippled Children, Elyria, Ohio.
- 8:30 "The Hospital and the Medical Profession"—Dr. C. D. Selby, chairman, Committee on

Hospitals, American Medical Association, State of Ohio.

Discussion.

Wednesday, May 10

Inspection of commercial exhibits.

9:30:-12:00 Noon symposium on building and equipment.

Discussion of the Ohio Building Code—Charles Owsley, Architect, Youngstown; The Noise Problem in Hospitals—Ray Parsons, Acoustical Engineer, Cleveland; Efficient Lights and Lighting—Walter Sturrock, Lighting Engineer, Cleveland; Paints and Color Effects—Edgar W. Fasig, Dayton.

General discussion.

Inspection of commercial exhibits.

12:45 p. m. Luncheon at Miami Valley Hospital—Dr. E. R. Crew, superintendent.

2:30 Round table on "Administration"—Conducted by M. R. Pratt, Aultman Hospital, Canton, Ohio.

Question box—Note: Visitors are urged to submit questions for discussion.

Inspection of commercial exhibits.

6:30 Dinner—Address by a prominent speaker.

Thursday, May 11

Inspection of commercial exhibits.

9:30 a. m. "The Training of Hospital Executives"—Dr. Willard C. Rappleye, Rockefeller Foundation, New York City.

10:00 "The Problems of Hospitals from the Point of View of:

1. The State Department of Health"—Dr. R. G. Leland, chief, Bureau of Hygiene.
2. The Board of State Charities"—Harry Howett, director of child care, department of Public Welfare.
3. The Nurse Examining Board"—Miss Augusta M. Condit, chief examiner.
4. The Industrial Commission"—Dr. T. R. Fletcher, chief medical examiner, Industrial Commission of Ohio.

Reports of Committees.

Constitution and Rules.

Auditing.

Membership.

Nominating.

Election of Officers.

Unfinished Business.

Adjournment.

Owing to a typographical error in the manuscript on "Management of a Venereal Disease Clinic" in the April issue, Dr. Alec N. Thomson was made the authority for the statement that in cities of less than 200,000 such clinics are managed with difficulty. The figure should have been 20,000.

"Many of you recall the day when you first realized that you really could do some school task or the like distinctly well. The stimulus of it made you work, perhaps as you never had before. From continued success through many years our attitude of confidence is developed. On this largely morale depends, and in many cases a single marked success goes far to produce it. The stimulus of success is an essential condition of normal development and mental health."—Selected.

ROYAL

Absolutely Pure

Baking Powder

Adds only wholesome qualities to the food and makes it appetizing.

CONTAINS NO ALUM

Your Occupational Therapy Supplies

For 65 years the name "Prang" has stood for "Quality" in Hand Work and Art Supplies. These "Prang Products" are being used by hundreds of the leading public, private and U. S. Government Hospitals for Occupational Therapy. They have Educational as well as Therapeutic value.

"Enamelac"

The Air-Drying Decorative Art Enamel

Ideal for all work in Decorative Design. It works on wooden boxes, toys, furniture, tin cans, glass bottles. Also on "Permodello" and "Ivorene" Jewelry. "Oilette Cloth," etc. Made in 22 colors. Price, per can, 30c. Outfit of 6 cans, shellac, turpentine and 3 brushes in hinged box, postpaid, \$3.00.

"Permodello"

The Permanent Modeling Clay—works like magic

This new Modeling Clay looks like ordinary clay but when exposed to the air it sets like concrete and becomes hard. It is used for making beads, jewelry, and hundreds of useful and beautiful articles. When hard it takes decoration with "Enamelac." Price, per pound can, 60c.

Long-Leaf Pine Needles

Native Material for Basketry and all Weaving. Needles from 12 to 18 inches long, beautiful in color, easy to weave. Price, per pound, 60c.

"Bateeko Dyes"

The Perfect Dye in Powder Form

While originated for "Batik" Work, they are ideal for all Art Dyeing. Price, per packet, 25c. Beautiful book on "Batik," by Lewis, postpaid, \$1.60.

"Dekko Board"

For All Decorative and Construction Work

This is a new Composition Board for making Toys, Table Mats, Boxes, Waste Baskets and other Novelties. Takes decoration with "Enamelac." Ready cut circles in 4 sizes for Table Mats. This new and inexpensive Board will solve many of your hand-work and construction problems. Send for sizes and prices.

A copy of our new 28-page illustrated "Prang Bulletin" will be sent free to hospitals and O. T. workers

THE PRANG CO., 1922 Calumet Ave., Chicago.

118 E. 25th St., New York City

"Stixit" Paste

The Stickiest Paste in Town. A Better "Library Paste."

"Stixit" was the first improvement in "Library Paste" in 25 years. 4-in. tube, 10c. 6-in. tube, 15c. 1/2-pt. tin can, 30c. 1-pt. tin can, 55c. 1-qt. tin can, 90c. 1-gal. tin can, \$2.75.

"Modelit" Modeling Clay

The Wax Modeling Clay Never Hardens

1/4 pound brick.....	\$0.15
1 pound brick.....	.50
5 pound brick.....	2.25
Clay Flour, per 5-lb. bag.....	.40

Raffia and Reed

Natural Raffia, per pound.....	\$0.30
Colored Raffia, per pound.....	1.00
Reed, Nos. 1, 2, 3, per pound.....	1.45
Nos. 4, 5, 6, per pound.....	1.35

"Ivorene" Jewelry

"Ivorene" is the newest material for work in Decorative Design. It looks like ivory, but comes in sheet form. It can be cut with a sharp knife or a coping saw. It takes "Enamelac" decoration and makes Pendants, paper cutters, book marks, tags, and many other practical articles. Per sheet 4 x 5 inches, 30 cents; 5 x 10 inches, 75 cents. Also cut larger sizes. Illustrated circular free.

"Ivorene Novelties"

We supply a line of eight "Ivorene Novelties" ready for decoration with "Enamelac." Your patients will delight in making designs for, and decorating these novelties that make artistic and useful gifts. Square mirror, \$2.00 per doz.; Pen Wiper, \$1.60 per doz.; Memo. Book, \$2.00 per doz.; Circular Mirror, (2 1/2 in. diam.), \$4.00 per doz.; Mirror (3 1/4 in. diam.), \$5.50 per doz.; Vanity Case, \$5.50 per doz.; Tape Measure, \$3.00 per doz.; Signature Blotter, \$2.00 per doz. Send for illustrated circular.

HINTS TO HOSPITAL SUPERINTENDENTS

A SATISFACTORY SYSTEM OF HANDLING PATIENTS' ACCOUNTS

A system of handling patients' accounts which is proving eminently satisfactory has been worked out at Presbyterian Hospital, Chicago, by the superintendent, Asa S. Bacon, and has been in successful operation since last autumn. The basis of the system is the billing of patients on the day of the week of entry, and its advantages lie in its reduction in effort and in its simplicity; the latter point does away with the necessity of employing trained and expert bookkeepers.

Cards bearing the day of the week, date of entry, name of patient and room number (Monday, May 1, John Jones, 311) are filed in a small case, classified as to days of the week.

Monday's section contains the cards of all patients who entered the house on that day of the week. Bills are sent out daily, Monday's patients being billed on Tuesday, etc. Three days later the cards are checked over to see if the bill has been paid. If the account has not been paid the patient is sent a check-up bill.

A color scheme makes the patient's status apparent at a glance. Colored metal clips attached to the upper edge of each card tell the story. For example:

Yellow clip—billed today.

Red clip—paid in advance.

Blue clip—in arrears.

Green clip—bill uncollected and account turned over to efficiency man.

White clip—free or part-pay case, social service department.

From the ledger sheet which is brought up to date each evening when the charges from the various departments come in, the patients are billed. The day's routine in the office consists in billing, checking and rechecking the cards, after the following schedule, no work being done on Sunday:

Sun.	Bill S.&S. Mon.	Bill M. Tues.	Bill T. Wed.	Bill W. Thurs.	Bill Th. Fri.	Bill F. Sat.
	Check	Check	Check	Check	Check	Check
	Thurs.	Fri.	S.&S.	Mon.	Tues.	Wed.
	Recheck	Recheck	Recheck	Recheck	Recheck	Recheck
	Tues.	Wed.	Thurs.	Fri.	S.&S.	Mon.

The day the ward patient comes in he is billed, for his account is payable weekly in advance. Private patients are not billed thus but on the third day of their stay if their first week's account has not been settled are sent the following printed notice:

The Rules of the Hospital

require payment of bills from all patients one week in advance. Should the patient stay less than a week, a proportionate amount for the unexpired term will be refunded. Your attention is respectfully called to this rule and you are requested to send payment of the accompanying bill to the cashier's office.

ASA S. BACON, Superintendent.

If this does not bring results a second more suggestively worded slip is sent.

The Rules of the Hospital

require prompt payment of all bills weekly. As the hospital is not operated for profit, but depends upon its daily revenue to carry on its service, it is necessary that strict compliance of this rule be observed. Unless payments are promptly made, much embarrassment to the hospital inevitably results.

With this explanation, your attention is respectfully called to the amount of your bill, \$_____ due_____ and its payment requested.

ASA S. BACON, Superintendent.

They are given a week to pay and on the day following the expiration of their week are billed.

In a large hospital the cost of cards is such a system is a considerable factor and to reduce this as much as possible the patient's day of entry, name, etc., are placed at the upper edge of the card. When his account is closed, the card is turned upside down and used again for another patient. The reverse side of the card is then used with both upper and lower edges. This enables one card to serve four successive patients.

NEW HARDWARE IN THE HOSPITAL

"Re-hardwaring" has made an unbelievable improvement in some hospitals. Like the working parts in any kind of machinery, hardware will wear out in time; old locks can be picked by a buttonhook; knobs get shabby and out of date. Hardware designs become old fashioned and out of keeping with newly decorated or remodeled rooms and buildings. New designs can be readily obtained which will entirely cover the markings of oil patterns and the hospital carpenter or house man with the aid of an awl and screw driver can easily do the trick. New hardware on windows, cupboards and doors will do much toward improving the appearance of buildings.



An appetizer, a garnish, an entree in one

Free Hospital Package

Write on your hospital letterhead to the Purity Oats Company, Keokuk, Iowa, for the free hospital package. Try this totally different rolled oats.

PURITY OATS COMPANY

Branch American Hominy Co.
KEOKUK & DAVENPORT
IOWA

Purity Rolled Oats not only satisfies the scientific requirement of most diets,—but it also has another usefulness.

It coaxes appetite, with its eye-appeal. It stimulates appetite,—with its sweet nut-like flavor. It satisfies appetite, with its nourishing oat-meats.

Purity flakes are the only flakes which cook up so beautifully whole,—because the bran coatings and the starches which they hold, have been so perfectly processed in the manufacturing.

Purity Rolled Oats



Totally Different

Famed for Flavor

QUERIES AND ANSWERS

FLOOR DRAINS IN OPERATING ROOMS

To the Editor of THE MODERN HOSPITAL:

I have been requested to write to you for arguments for and against drains in the floor of operating rooms. We have a new hospital with floor drains. The floor is always scrubbed with water containing disinfectant. Twice monthly the drain is removed and thoroughly cleansed and then flushed with two per cent Lysol solution. Several of our doctors have expressed themselves that they consider this drain a source of grave danger. The hospital board would appreciate it greatly if we might know what some men of attainments in the profession think about this matter.—SUPERINTENDENT.

On the subject of floor drains several superintendents and hospital architects have been consulted and their opinion is that these drains are not desirable, not so much because they are a source of danger, a contention which it would be exceedingly difficult to sustain, but because it is difficult to keep them clean and because they are really not necessary for the efficient care of operating room floors.

The tendency during the past decade among hospital architects who know their business thoroughly is to eliminate plumbing fixtures from the operating room altogether. Even with close and most conscientious supervision on the part of the hospital superintendent it is difficult to have drains in the operating room kept absolutely clean; theoretically it is all right to plan to have the drains cleaned out with two per cent Lysol solution twice a month, but you have no assurance that this will be done unless you give it personal supervision. The larger the institution and the more complex the superintendent's duties the less likely he is to see that this is done.

There is also this to be said about the drains, although it is a minor matter, unless water is run into them frequently there is danger that the water trap will dry up and thus permit the passage of sewer gases into the operating room. When this does happen it can of course be readily corrected by pouring some water into the drain. The better plan, on the whole, seems to be to omit drains from operating room floors.

CENTRAL OR INDIVIDUAL INCINERATORS?

To the Editor of THE MODERN HOSPITAL:

Which is preferable in the disposal of waste, a central plant or small individual incinerators?

SUPERINTENDENT OF HOSPITAL.

Experience in many hospitals has shown that a central incinerator is more serviceable than a number of small incinerators placed about in every service room. A central incinerating plant may be connected with the main heating system so it can be utilized for the burning of garbage. By having a central plant the man in charge is able to sort out from the waste each year many dollars' worth of surgical instruments, silverware and other arti-

cles which get down to the garbage room through the carelessness of employees.

QUIET ZONES AROUND THE HOSPITAL

To the Editor of THE MODERN HOSPITAL:

How may quiet zones be obtained around large city hospitals?

MEMBER OF BOARD OF DIRECTORS.

Most cities have ordinances providing quiet zones about hospitals, but very frequently these are of little avail because the city provides no officer for their enforcement. By frequent requests hospital authorities can usually get an officer detailed to that district for periods of time frequent enough to keep the quiet zone regulations in the public mind. The laying of wood pavement near hospitals is a big step in maintaining quiet.

STANDARDIZATION OF BANDAGES

To the Editor of THE MODERN HOSPITAL:

Would it be practical to install a central gauze room for several hospitals in a community to standardize bandages?

SUPERINTENDENT OF HOSPITAL.

There is no question but what there is economy in the standardization of bandages. As to whether it would pay to have a central gauze room or not that would depend largely upon local conditions. In the case of a small hospital which lacks the machinery, space and employees to make bandages and is consequently compelled to buy them, it would be economical if they were standardized.

WASHING SODA NOT INJURIOUS

To the Editor of THE MODERN HOSPITAL:

In our maternity hospital of sixty beds, soda was used at one time in the laundry for the babies' clothes, but as many of the babies had skin infections the use of soda was stopped and since then the infections have disappeared. Can you make any suggestions on this question?

A SUPERINTENDENT.

The use of washing soda in your laundry, if you rinse the goods properly, will not cause injury to the skin of either infants or adults. If you are using hard water, the goods may be harsh and therefore scratch the skin of the infants. Hard water causes lime soap to form and this causes the goods to be harsh.

VACATIONS FOR MEMBERS OF STAFF

To the Editor of THE MODERN HOSPITAL:

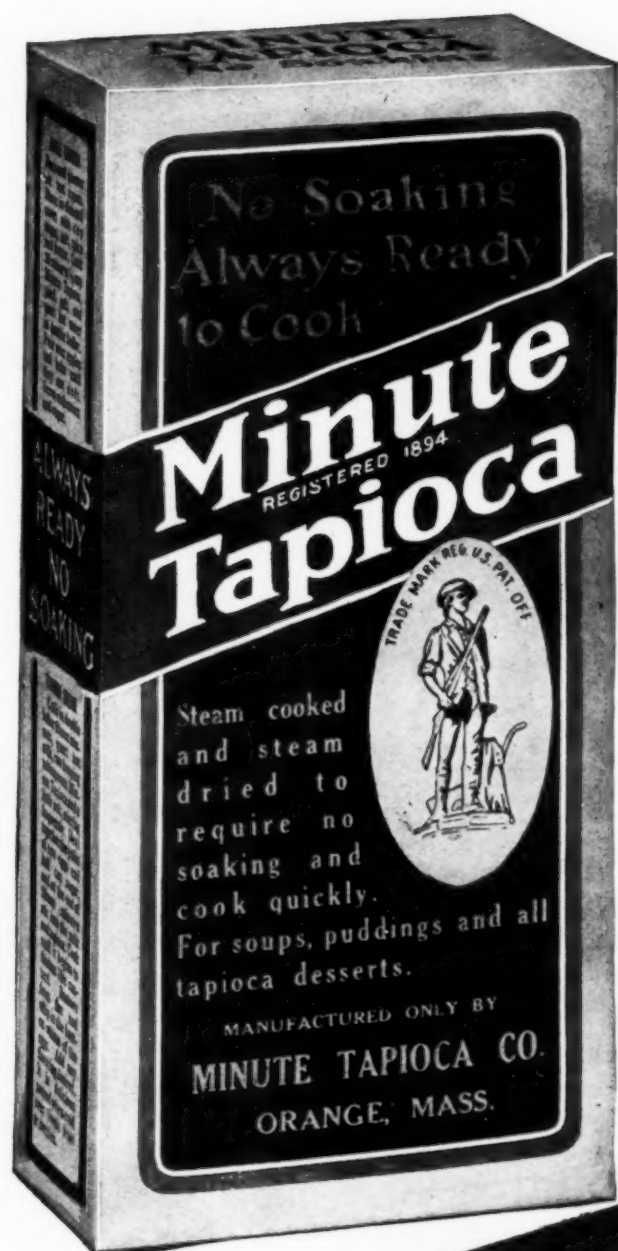
What length of holidays should be given the following:

- (a) Official nurses on staff?
- (b) Graduate or head nurses in charge of wards or doing floor duty?
- (c) Nurses in training?

HEAD NURSE.

There will be differences of opinion, no doubt, but a fair allowance seems:

- (a) One month. (b) One month. (c) Three weeks.



Patients like it

One simple dessert that patients never seem to tire of is Minute Tapioca. They like it because—"it's the kind of food we have at home."

There are a score of desserts you can make with Minute Tapioca. By varying them you can serve it often and yet escape any seeming monotony. You can use it in many diets—general, light, soft, and some specials.

The high nutritive value and ease of assimilation of Minute Tapioca are unquestioned. It is one of the standard items on the diet list in leading hospitals.

Minute Tapioca

It Requires No Soaking

Save time in your diet kitchen by using Minute Tapioca. It requires no soaking. It is always ready for use, and can be cooked thoroughly in fifteen minutes.

Our new five-pound carton is designed for hospital use. The 5-lb. cartons come 5 to a case—4 cases equalling 100 lbs. net.

Ask your wholesale grocer for this new size package of Minute Tapioca. Should you have any difficulty in getting it, let us know.

MINUTE TAPIOCA COMPANY, 135 Jefferson St., Orange, Mass.
Makers of Minute Tapioca, Minute Gelatine, and Star Brand Pearl Tapioca

LETTERS TO THE EDITOR

ADEQUACY OF SMALL LABORATORY EQUIPMENT QUESTIONED

To the Editor of THE MODERN HOSPITAL:

I feel that the article of Dr. G. F. Strong on the subject of "Laboratory Service in Hospitals of Less Than One Hundred Beds*" must not remain unanswered.

With all intentions of doing good, Dr. Strong, I fear has done much harm to hospital laboratories, for his paper will be read by hospital administrators (who always look for minimum expenditures and so-called "economic efficiency") as an authoritative statement of what small hospital laboratories can do or should do for their patients. Dr. Strong's line of endeavor is along hospital administration and not laboratory work. The old apothegm of "sticking to one's last" holds here very admirably.

The patients in a small hospital are just as sick as those in large hospitals. Their ailments are as obscure and as baffling in the country as in the city. Disease knows no aristocracy and is not necessarily urban. It is essential that their condition be studied for the purpose of arriving at a correct diagnosis, no matter where they lie. The so called "laboratory" described by Dr. Strong is as dangerous as rotten fire hose or inadequate fire escapes. The sense of "security is mortal's chiefest enemy."

I think it must be once for all understood that hospital economics is best served where the patient's health is most rapidly restored. Surely arriving at an early correct diagnosis is essential in the proper treatment of patients, and I think medical men will unanimously agree that the laboratory helps greatly toward this end. In order to forego laboratory examination because of its expense, it is not only unethical, but (from the community point of view) it is highly uneconomic. We might just as well (in order to save expense and increase income) put two patients in one bed, as they used to do half a century ago and do away with expensive sterilizers, rubber gloves, sterile gowns, etc., for the saving in expense that these factors would entail.

A hospital laboratory is a source of expense and should not be made a source of income to the hospital. It is as much a source of expense as the kitchens and laundry are, and it is just as essential. If a patient is charged for his stay in a hospital, this charge should include the laboratory expenditure, and in calculating the charge, the cost of running the laboratory should be taken into account. I think it must be once for all understood that the hospital laboratory is a necessity, not a luxury; and the better and the more adequate the arrangements are for the proper conduct of this department, the better will the hos-

pital function as a place where the sick are cured and not as a hotel where the stranger may find lodging for the night or for the month.

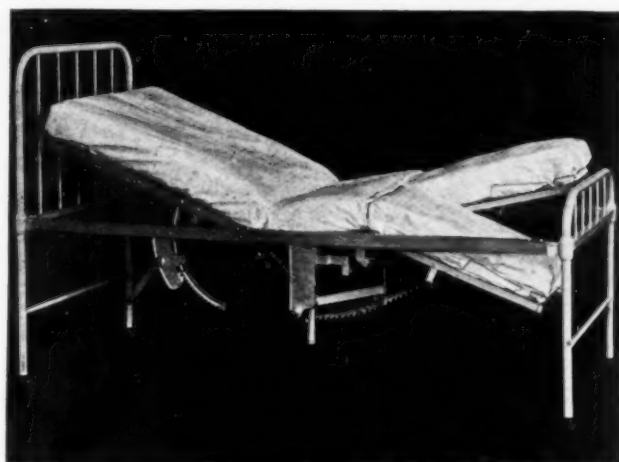
A hospital of fifty beds or more must support a well equipped laboratory. The patient should be charged—or the hospital should add to its budget—three to five dollars per week per patient for the proper running of the laboratory. The average stay of a patient in a hospital is about two weeks and the additional expense of six to ten dollars to or per each patient will not add a great burden to the individual and will bring its return in the therapeutic results that will be obtained. Hospitals make their charges according to cost of maintenance and they must invariably consider as part of their maintenance the cost of the laboratory department.

I often wonder at the conscience of a man who speaks about "efficiency and patients" with the same callousness as the man who speaks of "efficiency and pigs." It appears from the article that I have cited above that an incubator should not be installed in small hospitals where a microscope should be, because, whereas a microscope will be used for every patient, an incubator will be used for only one in ten patients. For this very good reason, blood cultures should not be done at this efficiently run hospital. Diphtheria cultures may not be examined. Anyone that worries about the tenth patient is referred to the bookkeeper's accounts which show a comfortable balance on the right side.

If a patient is admitted in an unconscious state to such an "efficient-essential" laboratory as Dr. Strong describes, it is not seemingly necessary to find out what the cause of this stupor is so that proper remedial measures may be adopted. Besides, this is rarely the case and the hospital takes care only of the usual, conventionally-sick patient. We can only cluck our tongue and say we are sorry, and assure the patient's wife or sister that we are doing all that can be done, whereas, in reality, we do not know what to do. We have made no provision for detecting a poison. We do not know if the coma is uremic or diabetic, etc., for we have made no arrangements for doing a blood chemistry. If the urine will not tell the whole story, so much the worse for the urine. It is too expensive to buy a colorimeter for fifty dollars, and our "technician" knows only how to make a blood count and a urine examination.

I might also say that the list of equipment presented by Dr. Strong presents one item that is extravagant and is really not needed in this laboratory. That is item No. 21 "One gross test-tubes, 8x1, for urines." So far as I know to examine urine in such test tubes is a task for the chemist in the land of Brobdignag where Gulliver was considered of a size on par with a canary bird. The test tubes are so large that there would be a great waste of reagents. If, however, the tubes are merely meant as col-

*MODERN HOSPITAL: 1921, xvii, p. 487.



Readily adjusted to the Bed Pan Position, Fowler, Mayo, Trendelenburg, Hammock, Chair, Reflex Abdominal and all other required positions.

Useful
Comfortable
Indispensable

For Modern Hospitals Everywhere

The WALLACE ADJUSTABLE WORM-GEAR BED

Fully covered by patents

LEADING hospitals and sanitariums have definitely approved the Wallace Adjustable Worm-Gear Bed for the genuine aid it gives to physicians and nurses and the added comfort that patients enjoy. The Battle Creek Sanitarium, Barnes Hospital, St. Louis, Illinois Central R. R. Hospital in Chicago—these are but a few of the representative institutions which recognize that the Wallace Adjustable Worm-Gear Bed provides a worthy standard in hospital and sick room equipment.

"The bed pan feature on your bed is alone worth the price you ask for the bed," writes a physician in Ohio.

From the standpoint of the attendant, the features of the bed's operation and ease of adjustment are important; a child can easily make any necessary changes without the slightest jar or discomfort to the patient. The Wallace Adjustable Worm-Gear Bed is durably constructed and comes equipped with Link Rust-Proof Fabric Springs. The bed is finished in white enamel.

Do not fail to see our exhibit at the Convention of the American Medical Association, Saint Louis, May 22-26.

Detailed information upon request. All orders will be shipped promptly.

Manufactured solely by

International Hospital Equipment Company

Address, Department 235, Chemical Bldg., SAINT LOUIS, MO.

lecting tubes for urine, this surely is inefficient. The tubes are round-bottomed and have a tendency to fall, crack and spill. Ordinary glass bottles of three-ounce capacity with wide mouths are much cheaper, will stand unaided and will not crack and spill so easily. One Bunsen (not Buntzen) burner is enough and will save about two dollars of the hospital equipment.

I also want to condemn Dr. Strong for recommending certain tests which are obsolete. We never examine any more for the Boas-Oppler bacilli, and we now do the fractional gastric analysis instead of the old Ewald method, etc.

Who was it that said: "God save me from my friends; I shall take care of my enemies?"

MAX KAHN, M.D., Ph. D.,

Director of Laboratories, Beth Israel Hospital, New York.

SURGICAL INSTRUMENTS AGAIN

To the Editor of THE MODERN HOSPITAL:

In the March issue of THE MODERN HOSPITAL the writer was very much interested in an article upon "Surgical Instruments of Today," by Dr. Thorek, as well as an article in defense of surgical instruments by some dealer unknown to the writer.

In this connection let me say that I appreciate fully the doctor's attitude from the experiences he described. On the other hand, I consider the article by the dealer, as an excellent defense, for in Dr. Thorek's article he unquestionably fails to give expression to the fact brought out by the dealer that this fault, in many instances, lies with the hospitals and their insistence upon the purchase of cheap merchandise.

It is an old story that one obtains just exactly what he pays for and nothing more, and the longer experience the writer has in business, as well as personal purchases, the more he believes this to be true. I would like to relate right here a concrete example of what came to our firm's attention only a couple weeks ago. One of our representatives on the road sent in a card of a new competitor in the field, stating that he was having difficulty in a certain territory owing to the fact that this man was selling hemostatic forceps for \$7.00 to \$8.00 a dozen depending upon the pattern, and scissors at a similarly ridiculous figure. The man in question, not being a member of our association, I immediately knew that it was not a standard house in the line handling standard goods and likewise the name and address indicated this as his card stated he was manufacturers' commission agent and he gave the address of his home, Newark, N. J.

I made it a point to delve into this particular incident to the bottom and found that the gentleman in question had previously been in the shirtwaist business and thinking that the surgical instrument line was a pretty good game to get into he started in this business. I traced the source of his supply and had an acknowledgment from the people who sold him the goods that the hemostatic forceps in question were sold to him at \$2.00 a dozen and they frankly admitted their pleasure in getting rid of this lot of "Japanese junk," as they termed it, yet he took it out and sold it to some of our best customers among hospitals.

While he was making from three to four hundred per cent profit on every dozen he sold, at the same time he was so far under us in price as to make us look ridiculous in asking \$18.00 to \$21.00 for similar instruments.

It is really for the surgeon to insist that the superintendent buy surgical instruments from certain reputable firms of known responsibility who will stand behind their

goods and not always purchase supplies of this nature on a price basis. As we were recently told by certain superintendents they appreciated the quality of our goods, the service we gave them and liked to deal with us but our prices were too high and the party that gave them the best price was the one that was going to get the business.

This is a very narrow attitude to assume on what Dr. Thorek terms so vital and important a thing as the instrument in the hand of the surgeon with the responsibility of a patient's life at stake, particularly in view of the fact that if the average hospital simply stopped to dissect what they actually expended in a year for surgical instruments it would find that item to be the most trivial part of the entire budget, exceeded by their butter and egg bill and almost everything else that they bought.

When we speak of surgical instruments we mean just what the name implies, but many superintendents have a habit of classifying these under surgical supplies and the like and running them in with other purchases for gauze, cotton, hospital furniture, etc., so that where they show a yearly expenditure on their balance sheet of possibly \$20,000, out of that \$20,000 there might not be \$500 that was actually expended for surgical instruments, and if they paid twice the figure at present day prices it would still maintain as being one of the smallest items of expense in operation of an institution.

HARRY W. LENTZ.

MOUNT SINAI DEDICATES BUILDINGS

Dedication of the three new buildings at Mount Sinai Hospital, New York, took place on April 9 with Mayor Hylan, Murray Hulbert, Adolph Lewisohn, Henry Morgenthau, John D. Rockefeller, Jr., and William Fellowes Morgan as guests of honor.

A new private pavilion with accommodations for 131 patients, a children's pavilion with a capacity of 120 beds and an auditorium building that will seat 400 were formally presented for acceptance by George Blumenthal, president of the hospital. Myron S. Falk, chairman of the building committee, made the presentation.

Speakers at the exercises were: Leo Arnstein, presiding officer; Bird S. Coler, commissioner of public welfare of New York; and Arthur Lehman, president of the Federation for the Support of Jewish Philanthropic Societies.

With the dedication of these three buildings, which cost \$3,000,000, Mount Sinai Hospital has completed the major part of its building program announced in 1913. Since that year seven buildings have been added by the hospital to the ten erected in 1901 to 1904.

"The newspapers of the United States are the friends of hospitals," said Ralph Welles Keeler, director of publicity of the hospital and homes of the Methodist Episcopal Church. "Take your local newspaper man into your confidence. Entertain members of the newspaper staff occasionally, just to get acquainted with them, and in order that they may come to know you. Make them feel that you wish to help them get such news as you have. Cooperate in giving them guidance in securing other news. Encourage feature writers to visit your institution. Interest them in special phases of the work of the institution. Furnish photographs when asked for them. Play up your staff in the paper. Help reporters and editors to get data along the line of your institution from other sources. Never be too busy to see a representative of the press. Be on the lookout for possible items of news that will bring them to you."